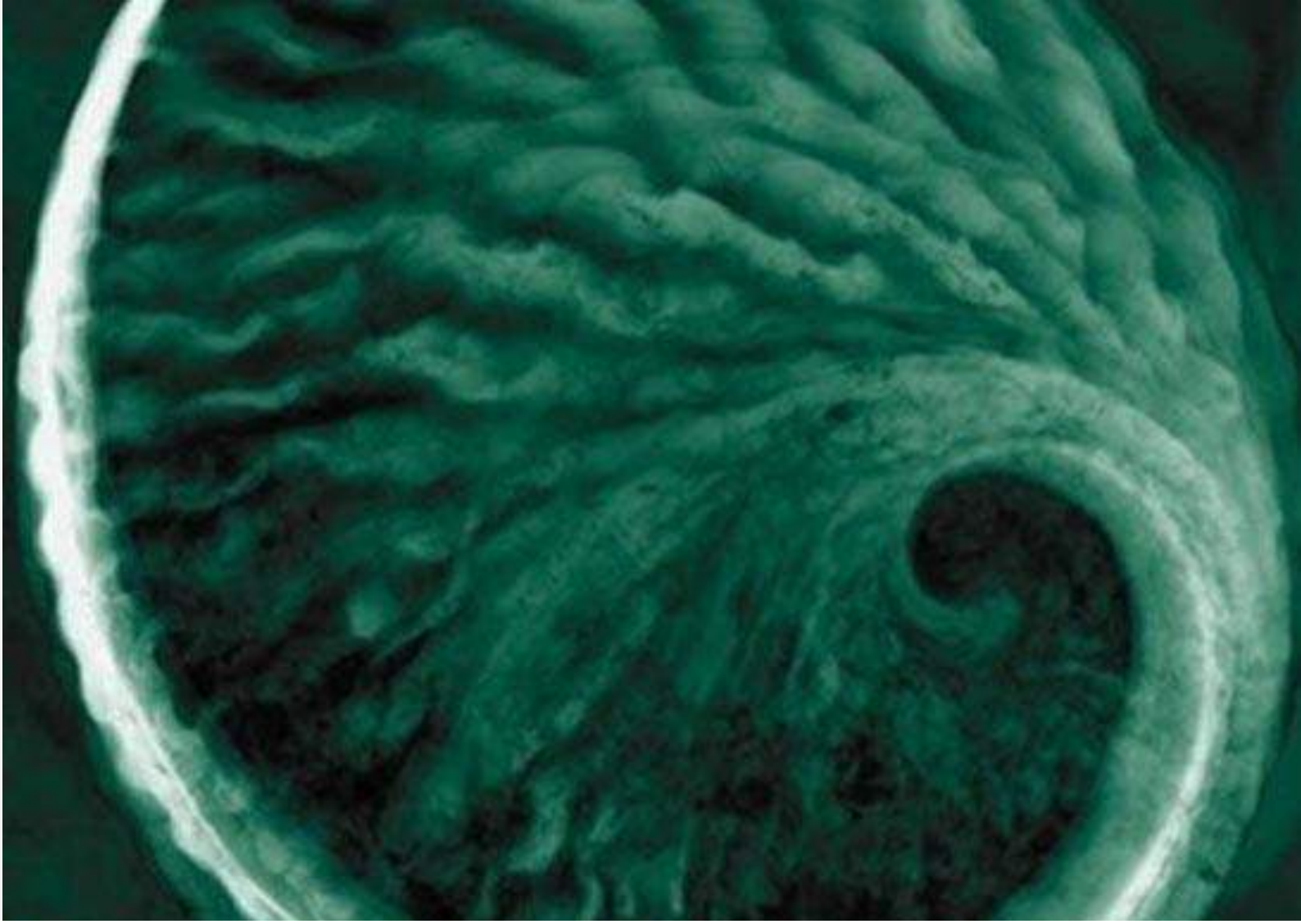

Ecology Impact Assessment

CWL01 & 02 Microsoft Ltd

October 2023

Project No.: 0657169

The business of sustainability

ERM

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Ecology Impact Assessment

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Acronyms and Abbreviations

CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
EcIA	Ecology Impact Assessment
ECoW	Ecological Clerk of Works
EPSM	European Protected Species Mitigation
ERM	Environmental Resources Management
GCN	Great Crested Newt
GLTA	Ground-Level Tree Assessment
HSI	Habitat Suitability Index
INNS	Invasive Non-Native Species
PRA	Preliminary Roost Assessment
RLB	Red Line Boundary
SINC	Sites of Importance for Nature Conservation
SSSI	Sites of Special Scientific Interest

1. INTRODUCTION

Environmental Resources Management Ltd (ERM) was instructed by RED Engineering, on behalf of Microsoft Ltd ('the Client') to undertake an Ecological Impact Assessment (EcIA) of the former Quinn radiator factory, Newport. This EcIA has been prepared to accompany the planning application submitted to Newport City Council for construction of a data centre complex with associated infrastructure ('the Proposed Development') on land located within the Imperial Park business park, Newport ('the Site').

This report details the findings of necessary protected species surveys specifically bats and great crested newt (*Triturus cristatus*) (GCN). The results of these surveys have been used to inform necessary mitigation and / or protected species licencing requirements to address any potential ecological impacts from the Proposed Development, taking into account relevant planning policy and legislation.

1.1 Site Description

The Site lies to the east of Newport, south of the M4, at national grid reference ST 27923 84118, and is approximately 16.5 ha. The former radiator site has been vacant since June 2019 and predominantly comprises warehouses, office buildings and areas of hardstanding (former parking spaces, roads and pedestrian areas). In the eastern areas of the site there are areas of amenity grassland, ornamental planting and scattered trees, these areas were previously heavily managed but since the abandonment of the site this management now appears to be less frequent. Due to the reduced management around the site, there are areas of tall ruderal and ephemeral vegetation within the areas of hardstanding and bare ground. Other habitats within the site include scrub and semi-improved grassland.

1.2 Planning Policy and Legislation

All relevant legislation and policy discussed in the report are further detailed in **Appendix A**.

2. METHODS

2.1 Desk Based Study

A background data search was undertaken, and the following information was reviewed:

- Aerial photography review via MAGIC and Google Earth (for context only);
- Designated site locations (statutory and non-statutory) via the South East Wales Biodiversity Records Centre;
- Protected and noteworthy species records via MAGIC.

Searches were made for statutory and non-statutory designated sites and records for protected and noteworthy species within 2 km of the Site boundary.

2.2 Extended Phase 1 Habitat Survey

An initial Extended Phase 1 Habitat survey was completed by Kirsty Rogers (MZoo, ACIEEM) of BSG Ecology on 30 June 2021 (**Appendix B**). A further survey, in order to update the findings of the initial survey was undertaken by ERM in 2023 (**Appendix D**)

The updated Extended Phase 1 Habitat survey was undertaken on 25 May 2023 by ERM senior consultant Errol Ibrahim and assisted by Max Canning, a consultant. Errol has over 9 years' experience in ecological consultancy and is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). He is experienced in undertaking Extended Phase 1 Habitat surveys and holds a Class 2 Natural England licence for bats (2017-32783-CLS-CLS) and a Class 1 great crested newt licence (2015-16242-CLS-CLS).

The surveys were based on the methods described in the Handbook for Phase 1 Habitat Survey (Joint Nature Conservation Committee 2010)[1] as extended for use in Environmental Assessment[2].

Surveys involved the mapping of habitats using a set of standardised habitat codes (**Figure 1, Appendix C**), target notes were made to illustrate examples of habitats present. Any invasive non-native species (INNS) identified were noted, however, an exhaustive search for INNS was not undertaken. Plant nomenclature in this report follows Stace (2019)[3]. The report for this survey can be found in **Appendix D**.

2.2.1 Protected Species

The site was assessed for its suitability for protected and notable animals that are likely to occur in the area. These included but were not limited to amphibians, badgers (*Meles meles),* bats, breeding birds, common reptiles and hazel dormice (*Muscardinus avellanarius*). The site was systematically searched for signs of these species.

The Extended Phase 1 Habitat Survey Report (**Appendix D)** details which protected species the site was deemed suitable for, this EcIA will focus on those protected species. The methods, results and conclusions for species scoped out of this assessment can be found in **Appendix D**.

2.3 Bats

Field surveys undertaken as part of this assessment were done so according to The Bat Conservation Trusts[4] guidelines and by experienced surveyors.

[1] JNCC (2010), Handbook for Phase 1 Habitat Survey (revised edition). JNCC, Peterborough.

[2] Institute of Environmental Assessment (1995) Guidelines for Baseline Ecological Assessment, Spon, London.

[3] Stace, C.A. (2019), New Flora of the British Isles (4th edition). C&M Floristics, Stowmarket.

[4] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London. ISBN-978-1-7395126-0-6.

2.3.1 Preliminary Roost Assessments (PRA) of Buildings

During an Extended Phase 1 habitat survey, internal and external features of buildings were assessed for features which could provide bats with access into roosting spaces within them or which provide roosting spaces (such as gaps under roofing tiles, gaps in ridge tiles, gaps in soffit boxes).

Evidence of the presence of bats such as bat droppings on windows, windowsills, walls, and the ground, or staining from fur around possible roost access / egress points was searched for during the assessment.

Buildings were categorised by their suitability to support roosting bats as shown in **Table 2.1.**

Table 2.1 Guidelines for Assessing the Potential Suitability of Buildings to Support Roosting Bats (Collins, 2016) [5]

Suitability	*Description Roosting Habitats*
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure of one, or more, potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions[6] and / or suitable surrounding habitat to be used on a regular basis, or by large number of bats (i.e., unlikely to be suitable for maternity or hibernation).
Moderate	A structure with one, or more, potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat, but unlikely to support a roost of high conservation value (with respect to roost type only)
High	A structure with one, or more, potential roost sites that are obviously suitable for use by large numbers of bats on a more regular basis and potentially for longer periods due to their size, shelter, protection, conditions, and surrounding habitat.

2.3.2 Ground-Level Tree Assessment

A daytime ground-level assessment was carried out of each of the trees on the site. An inspection of each tree was undertaken for their potential for roosting bats, which involved a visual survey from ground-level using binoculars and a torch to identify features which have potential for bats to use as roosts or evidence of bats. Typical roosting features on trees include holes, cracks and splits, cavities, peeling bark and deadwood.

Trees were categorised by their suitability to support roosting bats as shown in **Table 2.2.**

Table 2.2 Guidelines for Assessing the Potential Suitability of Trees to Support Roosting Bats (Collins, 2016)

Suitability	*Description Roosting Habitats*
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A tree of sufficient size and age to contain potential roosing features but with none seen from the ground or features seen with only very limited roosting potential.

[5] Collins, J. (ed). (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London.
[6] E.g., suitable humidity, height above ground-level, appropriate light levels or levels of disturbance

Moderate	A tree with one, or more, potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat, but unlikely to support a roost of high conservation value (with respect to roost type only)
High	A tree with one, or more, potential roost sites that are obviously suitable for use by large numbers of bats on a more regular basis and potentially for longer periods due to their size, shelter, protection, conditions, and surrounding habitat.

2.3.3 Bat Activity Survey

Habitats on site were initially assessed as having moderate suitability for foraging and commuting bats during the 2021 Extended Phase 1 habitat survey.

Transect surveys were undertaken in accordance with the *Bat Survey Guidelines*[7] to identify the key commuting and / or foraging areas on site and to confirm which species are present. Surveys were undertaken in May, July, and September 2023.

Transect surveys consisted of one survey per season (Spring, Summer, and Autumn), in appropriate weather conditions. All of these visits were dusk surveys which began at sunset and ended at least two hours after sunset (depending on the level of activity). These surveys involved the walking of a pre-determined transect on the site, which covered all key habitat areas, whilst continuously recording any signs of bat activity (using a Batlogger M) and stopping for five minutes at pre-determined "sampling locations". These sampling locations were selected areas of high-quality habitat where bats were likely to be using for foraging and / or commuting.

2.3.4 Static Detector Surveys

Static detector surveys were undertaken to record the bat activity at a fixed location and over longer periods than the transect surveys. The surveys were undertaken using one Anabat Swift detector. The detector was deployed for at least five consecutive nights at a single location in the north west corner of the site (shown on **Figure 1, Appendix C**). The detector was deployed during each of the seasonal bat activity transect surveys (May, July and September). The location of the static detector was chosen as it provided high quality habitat for commuting and foraging bats.

The detector was programmed to record from approximately 0.5 hours before sunset until approximately 0.5 hours after sunrise. Recordings were analysed using Anabat Insight software.

As static detectors are deployed for longer periods of time (when compared to transect surveys), they can pick up variability in bat activity.

2.3.5 Call Analysis

Bat calls recorded on Batlogger M and Anabat Swift detectors are uploaded to specialist software programmes (BatExplorer and Anabat Insight respectively). The software allows the ecologist to assess the call structure and more accurately identify the species to which each call belongs.

2.3.6 Bat Survey Limitations

Two of the units / buildings on site were locked during the 2021 survey and preliminary roost assessments could only be undertaken externally. This is taken into consideration within the assessment and is not considered to be a significant limitation.

There are limitations associated with species identification from acoustic monitoring. Echolocation calls from congeneric species often exhibit a large degree of overlap in their call structures making definitive identification difficult. Also, a bat will vary the structure of its echolocation calls to reflect its

[7] Collins, J. (ed). (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London.

proximate needs. This behaviour results in a large degree of variation in the call structure of any given bat species and can also result in the structure of echolocation calls overlapping with those of other bat species. Species identification is therefore applied with a level of confidence, especially where deterministic call characteristics are not present within a recording.

Six species belonging to the Myotis genus are known to be resident in the UK. There is a large amount of overlap between the characteristics of the echolocation calls of these congeneric species and so a definitive identification of Myotis bats to species level is rarely possible from frequency.

2.4 Great Crested Newt Surveys

GCN surveys were led by licenced GCN surveyors from BSG Ecology; Kirsty Rogers who holds a GCN survey license (S098966/1) with Natural Resources Wales, and James Garside (BSc, QCIEEM) who holds a GCN survey license (S088796/1) with Natural Resources Wales. Surveys were assisted by Senior Ecologists Joanne Conway (BSc, PG Cert, QCIEEM) and Rosie Sparks (BSc, MSc, ACIEEM) and Consultant Ecologist Charlotte Alsop (QCIEEM) who are experienced in GCN surveys.

2.4.1 Habitat Suitability Index (HSI) Assessment

Nine ponds within 250 m of the site red line boundary (RLB) were assessed for their suitability to support GCN. The Habitat Suitability Index (HSI) used was proposed by Oldham *et al.* (2000) and is a numerical index between 0 and 1, 0 indicates low suitability and 1 represents optimal habitat. The HSI incorporates ten suitability indices, all of which are factors thought to affect great crested newts. These are:

- location (SI_1);
- pond area (SI_2);
- pond drying (SI_3);
- water quality (SI_4);
- shade (SI_5);
- presence of fowl (SI_6);
- presence of fish (SI_7);
- number of ponds within 1 km (SI_8);
- terrestrial habitat (SI_9); and
- macrophytes (SI_{10}).

All indices were scored, which were then converted to SI scores on a scale from 0.01 to 1, scores that were numerical are converted to SI scores using graphs produced by Oldham *et al.* (2000). The following formula is then used to calculate the HSI score:

$$HSI = (SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10})^{1/10}$$

Table 2.3 shows a categorisation of HSI scores developed by Lee Brady (unpublished)

Table 2.3 Categorisation of HSI Scores

HSI Score	Pond Suitability
<0.5	Poor

0.5-0.59	Below average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

The HSI is a measure of habitat suitability, however, there is a positive correlation between HSI scores and the number of great crested newts in a pond. Typically, ponds with a high HSI score are likely to be associated with higher numbers of great crested newts. However, the relationship is not strong enough to allow predictions to be made on the presence of great crested newts within a pond.

2.4.2 Presence / Likely Absence Survey

GCN surveys were carried out on five ponds within 250 m of the RLB. Four survey visits were undertaken at ponds 1, 3, 7, 8 and 9 between 5th May 2022 and 25th May 2022. Detailed information of the survey dates, times and conditions can be found in **Appendix B**. Surveys were undertaken in accordance with English Nature survey guidelines[8], and were carried out in suitable weather conditions. Each survey visit used the three following methods (where possible) – bottle trapping, egg searching, and torching.

2.4.2.1 Bottle Trapping

Bottle trapping comprised setting out a number of bottle traps (typically 2 litre plastic bottles with their end cut off and inverted, attached to a cane) around the margins of the pond at *c.*2 m intervals and left over night.

Newts swim into the entrance of the bottle but cannot escape, traps are then checked the following morning between 0600 and 1100. Any newts caught are identified to species level, sexed, counted, and released.

This method is particularly useful when surveying turbid and / or weedy ponds. It should only be used when the nighttime temperature is >5°C. If not undertaken correctly this method can be harmful to newts within the traps, it is also unsuitable to use this method during periods of hot weather and where water levels are low or if there is a risk of vandalism.

2.4.2.2 Egg Searching

Egg searching involved the search of all vegetation (live and dead) within the ponds for great crested newt eggs. All UK native newts fold a leaf over the top of an egg in order to protect it from predation. Once discovered, a licensed surveyor is able to identify the species of newt which laid the egg based on its size and colour. Once great crested newts have been reliably identified, the egg search would stop. This method could only assess a pond for presence / absence and not population size.

2.4.2.3 Torching

Torching was undertaking at night, when there was little or no wind, no rain and a nighttime temperature of >5°C. Surveys involved walking slowly around the edge of the pond and using high powered torches (1,000,000 candlepower) to shine into the water and search for GCN. This survey method is limited in heavily vegetated and / or turbid ponds. Any newts seen were identified to species level, sexed (where possible) and counted.

[8] English Nature (2001) *Great crested newt mitigation guidelines.* English Nature, Peterborough.

2.4.3 GCN Survey Limitations

A HSI assessment was not undertaken on Pond 6, and neither were presence / likely absence surveys, due to dense surrounding vegetation limited visibility and access to the water's edge.

It was not possible to bottle trap Pond 1 due to the low water levels during the survey period. However, due to the small size of the pond, good visibility and access to the whole pond edge, egg searching and torching is considered sufficient to be confident in a presence / likely absence result.

It was not possible to bottle trap Pond 9 due to low water levels during the survey period. Access to approximately 40% of the pond was possible for egg searching and torching.

Pond 8 was not torched during survey visit four, due to health and safety concerns following an interaction with a member of the public using an air rifle in the vicinity of the pond.

Pond 2 was not surveyed due to health and safety concerns as the banks were steep and access to the water's edge was limited by dense vegetation.

Pond 4 was not surveyed due to health and safety concerns as the banks were steep and access to the water's edge was limited by dense vegetation. There was also a significant quantity of fly-tipped rubbish from the adjacent road.

Pond 5 was not surveyed due to health and safety concerns as the banks were steep and access to the water's edge was limited by dense vegetation. Where bankside access was possible emergent vegetation covering the water's surface restricted torching, and low water levels prevented bottle trapping.

These limitations have been taken into consideration within the results and assessment sections of this report.

2.5 Common Reptiles

The site was assessed for its suitability for common reptiles i.e., common lizards (*Zootoca vivipara*), grass snakes (*Natrix helvetica*), slow-worms (*Anguis fragilis*) and adder (*Vipera berus*). Suitable habitat for reptiles includes areas which provide basking such as south-facing slopes, hibernation sites such as log piles and foraging habitat. Foraging habitat differs between species but includes rough grasslands, woodlands, ponds, and wetlands.

2.6 Nesting Birds

The site was assessed for its potential to be used by nesting birds, considering habitat types and the location of the site. Birds can use a variety of habitats for nesting such as trees, hedgerows, buildings and grasslands.

3. RESULTS

3.1 Designated Site

The desk study identified one statutory designated site and seven non-statutory designated sites within 2 km of the site boundary. The results are presented in **Table 3.1.**

Table 3.1 Statutory and Non-Statutory Designated Sites

Site Name and Designation	Key Interest Features	Distance / Direction from Site
Statutory Designated Sites		
The Gwent Levels – St Brides SSSI	The Gwent Levels comprises an extensive area of reclaimed wet pasture and is the largest area of its kind in Wales. The Levels are notified for the rich and diverse plant species and communities that occur due to the varied characteristics of the reens and the differing management regimes they are subject to. The aquatic invertebrate fauna is also particularly diverse, with many rare or notable species present, and the area is important in a regional context for its snails and for its dragonfly assemblage.	176 m south
Non-Statutory Designated Sites		
LG Duffryn Site 2	Natural grassland habitat comprising a large area of neutral grassland adjacent to Gwent Levels SSSI.	65 m east
LG Duffryn Site 1 (South Lake Drive)	Standing open water, reed-bed and birds assemblage including Cetti's warbler (*Cettia cetti*).	195 m east
Celtic Springs Site SINC	Post-industrial mosaic habitat, neutral grassland, and calcareous grassland.	550 m north
Duffryn Pond SINC	Pond with emergent swamp vegetation, which supports a range of important invertebrate, plant, reptile, amphibian, and mammal species.	965 m north east
Cwm Pensidan SINC	Ancient semi-natural woodland, dominant species include ash (*Fraxinus excelsior*) and alder (*Alnus glutinosa*).	1.5 km north
White Gates SINC	Neutral grassland - "Relatively un-improved", semi-improved neutral grassland, species rich.	1.8 km north west
Afon Ebbw River SINC	Major river system with associated semi improved neutral grassland and marshy grassland, swamp, scrub, and semi-natural woodland. Associated species include bulbous foxtail (*Alopecurus bulbosus)* kingfisher (*Alcedo atthis)*, sand martin (*Riparia riparia)*, grass snake.	1.9 km north east

3.2 Habitats

Habitats found on site (see **Figure 1, Appendix C**) are common and widespread and do not qualify as Habitats of Principal Importance. These habitats were:

- bare ground and hard standing with ephemeral/short-perennial and tall ruderals;
- amenity grassland;
- semi-improved grassland;
- scrub;
- scattered trees;
- intact species-poor hedgerow; and
- introduced shrub.

Full details and descriptions of the habitats, with photographs, are provided in **Appendix D**.

3.3 Bats

3.3.1 PRA of Buildings

All buildings on site have a negligible suitability for roosting bats, refer to **Appendix B** for detailed results and descriptions of buildings.

Although two buildings (security cabins east and west) could not be accessed internally during surveys in 2021, the categorisation of negligible roosting potential is considered valid, as there were no entry points for bats and so they could not clearly roost internally. During the 2023 surveys, ecologists were able to access security cabin east and subsequently confirmed its unsuitability for roosting bats.

3.3.2 Ground-Level Tree Assessment

Trees on site are small, immature, or scrubby with no obvious areas of damage or decay which may offer roosting features. All trees were assess as having negligible potential for roosting bats.

3.3.3 Bat Activity Survey

Transect surveys recorded six taxa: common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*), Leisler's bat (*Nyctalus leisleri*), *Nyctalus* species and *Myotis* species. The number of passes recorded by the BatLogger have been detailed in **Table 3.3.** The results do not show the total number of individual bats recorded per survey; they show the number of times an individual bat passed per survey, where an individual bat could pass multiple times.

Table 3.2 shows the dates, survey times and weather conditions for each of the surveys.

Table 3.2 Bat Transect Survey Dates and Weather Conditions

Date	Survey Type	Start Time	End Time	Weather Conditions
25 May 2023	Dusk	21:15	23:15	16°C Beaufort[9]: 2

[9] A scale of wind speed based on a visual estimation of the wind's effects, ranging from 0 ('calm') to 12 (Hurricane).

				Oktas: 6[10]
17 July 2023	Dusk	21:20	23:30	16°C Beaufort: 3 Oktas: 6
04 September 2023	Dusk	19:55	22:00	21°C Beaufort: 3 Oktas: 0

Table 3.3 Transect Survey Results: Number of Bat Passes (per Species) per Survey

Species	Number of bat passes		
	25 May 2023	17 July 2023	04 September 2023
Pipistrellus pipistrellus	21	13	64
Pipistrellus pygmaeus	1	2	11
Nyctalus noctula	-	1	4
Nyctalus leisleri	-	-	1
Nyctalus sp	-	-	2
Myotis sp.	-	2	1

3.3.4 Static Detector Survey

Throughout the survey period at least five species of bat were recorded on the static detector, these were common pipistrelle, soprano pipistrelle, *Myotis* species, *Nyctalus* species and greater horseshoe bat (*Rhinolophus ferrumequinum*), see **Table 3.5**

Table 3.4 shows the dates which the static detector was deployed for.

Table 3.4 Static Detector Survey Dates

Survey Night	May 2023	July 2023	September 2023
1	25/05/2023	17/07/2023	06/09/2023
2	26/05/2023	18/07/2023	07/09/2023
3	27/05/2023	19/07/2023	08/09/2023
4	28/05/2023	20/07/2023	09/09/2023

[10] Unit of measurement describing the amount of cloud cover. Ranging from 0 (completely clear sky) to 8 (completely overcast).

5	29/05/2023	21/07/2023	10/09/2023

Table 3.5 Summary of results from the static surveys

Species	Spring	Summer	Autumn
	Number of Files	Number of Files	Number of Files
Pipistrellus pipistrellus	160	476	1,393
Myotis sp.	2	5	42
Nyctalus sp.	0	55	93
Pipistrellus pygmaeus	26	39	270
Rhinolophus ferrumequinum	1	0	0
Total bat passes	**189**	**575**	**1,798**

3.3.5 Bat Survey Results Summary

Species recorded on site are widespread within south Wales. Activity levels were moderate with a large increase in activity in Autumn, mostly due to an increase in *Pipistrelle* passes but both *Myotis* and *Nyctalus* calls increased in Autumn when compared with the two other seasons. It is likely that the static detector was picking up calls from the woodland area off site, which is why the level of activity is higher than expected in a heavily built environment.

A single greater horseshoe bat pass was recording in Spring, although rare across much of the UK, with a population size of approximately 4,000, southern Wales is a stronghold for the species.

3.4 Great Crested Newt

Full results of the HSI and presence / absence for each pond are presented in **Appendix B**.

There are no waterbodies within the site boundary, nine ponds are located within 250 m of the site RLB.

A HSI was undertaken of eight of the nine ponds. Three scored ‘average’ suitability and the remaining five scored ‘below average’ or ‘poor’, with the majority scoring low on water quality and presence of fish and / or waterfowl.

GCN were not present within any of the ponds surveyed. Smooth newt (*Lissotriton vulgaris*) was recorded in low numbers in ponds 7 and 8.

3.5 Common Reptiles

The majority of the site is unsuitable for reptiles. Hardstanding and buildings offer limited suitability foraging or refuge habitat although areas of hardstanding could be used for basking if reptiles are present. The areas of semi-improved grassland and scrub, provide some suitable habitat for reptiles. No reptiles were seen during the survey. Due to the limited habitat on site and the lack of connectivity to wider habitats, it is considered unlikely that reptiles are present on site.

3.6 Nesting Birds

Buildings, trees, scrub, and grassland within the site provide suitable nesting habitat for birds. A number of feral pigeons (*Columba livia domestica*) were seen using the warehouses during the survey.

4. DISCUSSION

4.1 Designated Sites

4.1.1 Statutory Designated Sites

One statutory designated site (The Gwent Levels – St Brides SSSI) is located within 2 km of site. Direct impacts (e.g., removal or modification) of habitats associated with the SSSI are not anticipated as a result of development of the site, due to the distance. However, indirect impacts (e.g., pollution effects) through run-off during construction through storm drains into adjacent reen systems, may result in degradation or physical damage of habitats and / or impacts to protected species associated with the SSSI.

4.1.2 Non-statutory Designated Sites

Seven non-statutory designated sites were identified within 2 km of the site, the closest is LG Duffryn site SINC (located 65 m east). It is not anticipated that identified SINC sites will suffer direct impacts (e.g., removal or modification) or indirect impacts (e.g., noise or visual disturbance or pollution effects) as a result of the development of the Site, due to the distance and lack of connectivity between the site and SINC habitats.

4.2 Habitats

Habitats on site lack particular ecological value owing to their collective amenity character. The construction of purpose-built data centre buildings with associated infrastructure and landscaping will result in the loss of the majority of habitats on site. Loss of these habitat will have no long-term impact as the vegetation found within them are common in the local area and of low / negligible ecological value.

4.3 Protected Species

4.3.1 Bats

Surveys in 2023 confirmed that no new features on buildings or trees were present and the categorisations from the 2021 remained the same.

Whilst buildings and trees on site were assessed to have negligible potential for roosting bats, surveys recorded moderate levels of bat activity, with increased levels recorded during the autumn surveys.

The Landscape Tree Removal Plan (**Figure 2**, **Appendix C**) indicates that some foraging and commuting habitat will be lost during construction of the Proposed Development. This is not expected to significantly impact the local bat population due to an abundance of alternative foraging habitat in the surrounding area. However, it is possible that there may be an impact on bats utilising the site, caused by lighting and construction activities. Slow flying species such as *Myotis* and greater horseshoe bats which were recorded on site often avoid illuminated areas and so this could negatively affect their feeding behaviour.

4.3.2 Great Crested Newts

No GCN were recorded during further survey work, however due to survey limitations detailed above a precautionary approach to habitat clearance is recommended to avoid impacts to this species, in the unlikely scenario that they are present.

4.3.3 Common Reptiles

Despite some suitable reptile habitat present on site, it is deemed unlikely that reptiles are present, on account of no reptiles being observed during site visits and due to the presence of significant

movement barriers (dual carriageway, and A roads) surrounding the site. Therefore, reptile surveys are not considered necessary.

However, as some suitable habitat is present on site, a precautionary approach to habitat clearance is recommended in order to avoid the unlikely scenario of reptiles being injured or killed.

4.3.4 Birds

Buildings, trees, scrub and grassland within the site provide suitable nesting habitat for birds. As part of the Proposed Development, these suitable nesting habitats will be removed. Recommendations in **Section 5.2.4** outline measures to be undertaken to ensure compliance with the Wildlife and Countryside Act 1981.

5. MITIGATION AND ENHANCEMENTS

5.1 Designated Sites

Any proposed works will need to be carefully planned and controlled to ensure that no construction materials or pollutants can enter the adjacent watercourse. It is anticipated appropriate avoidance and mitigation measures to prevent direct and indirect damage or degradation to retained habitats would be incorporated into a Construction Environmental Management Plan (CEMP) for the Site and include detailed pollution prevention measures.

5.2 Habitats

The Proposed Development will seek to enhance biodiversity by creating a more ecologically diverse landscape in line with national policy[11] and local objectives. This will include the planting of native trees, hedgerows, wildflower meadows, woodlands, and ponds (**Figure 3, Appendix C**) in place of lower value habitats to be lost to the Proposed Development.

The Proposed Development SuDS scheme / drainage design should seek to maximise biodiversity value in accordance with Welsh Government guidance and will provide the opportunity to deliver biodiversity enhancement on Site. The SuDs scheme "*should aim (where appropriate) to be similar to, linked with, and / or supportive of the natural and semi-natural local habitat and associated species*" (Welsh Government, 2018), including species associated with the Gwent Levels SSSI.

The Natural England Biodiversity Metric v4.0 has been used to quantify the biodiversity value of baseline habitats within the site and those proposed under the Landscape Plan will result in a > 200% increase. Full details are provided in the *Biodiversity Net Gain Report* (ERM, 2023)[12].

5.3 Protected Species

5.3.1 Bats

To mitigate impacts on bats, an appropriate lighting strategy should be employed during construction and operation. To carefully manage light levels within the Proposed Development and to ensure the site is able to provide continued undisturbed foraging and commuting habitat for bats, any new lighting should be designed in line with good practice[13], such as minimising light spill and directing it away from boundary habitats such as areas of woodland.

The Proposed Development will provide an increase in available bat foraging and commuting habitat in the form of native hedgerows, scrub, woodland, and ponds.

5.3.2 Great Crested Newts

Sensitive working methods adopted during the construction phase including pollution prevention measures and supervision of site clearance works by a suitably qualified Ecological Clerk of Works (ECoW). In the unlikely scenario that GCN are found, any site activity will need to halt immediately and both the GCN and its habitats must remain in-situ within the searched area, with the Project Ecologist consulted in the first instance. In this scenario a European Protected Species Mitigation (EPSM) licence will be required.

The Proposed Development will provide an increase in available GCN habitat in the area in the form of wildflower meadows, scrub, woodlands, and ponds.

[11] Section 6 of the Environment (Wales) Act 2016

[12] Biodiversity Net Gain Report: Former Quinn Radiator Factory, October 2023 (ERM)

[13] Bat Conservation Trust (2023) *Bats and Artificial Lighting at Night* [Online] Available at: https://www.bats.org.uk/news/2023/08/bats-and-artificial-lighting-at-night-ilp-guidance-note-update-released

5.3.3 Common Reptiles

Any clearance of suitable reptile habitat (semi-improved grassland and scrub) should be undertaken under a precautionary working method statement, under the supervision of the site ECoW. This method statement should include instructions on phased vegetation clearance in order to dissuade reptiles into areas of suitable habitat which will be undisturbed during the proposed works.

The Proposed Development will provide an increase in habitats suitable for reptiles, as part of the BNG plan. These habitats will include wildflower meadows, scrub, woodlands, hedgerows, and ponds.

5.3.4 Birds

To ensure compliance with the Wildlife and Countryside Act 1981, any work involving vegetation clearance during the peak bird nesting season (March to August inclusive, or earlier / later if weather conditions are particularly mild) must be avoided.

If any clearance works to nesting habitats are required during the nesting season, then pre-construction checks for nesting birds would need to be carried out by a suitably experienced ecologist no more than 48 hours prior to the works commencing.

If any nesting birds are found to be present, an appropriate buffer zone would be implemented, within which works are excluded for the duration of the breeding attempt. Any active nests will need to be left in situ until a suitably experienced ecologist confirms that birds have stopped using them.

In the unlikely event that any birds listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), are found to be nesting on Site, an ecologist will need to be contacted for further advice.

The Proposed Development will provide biodiversity net gain in habitats suitable for foraging and nesting birds, these habitats will include wildflower meadows, scrub, woodlands, hedgerows, and ponds. Bird boxes will also be installed to provide enhanced nesting opportunities for a number of bird species. Bird boxes will need to be installed in suitable locations and in accordance with good practice guidelines[14].

[14] Royal Society for the Protection of Birds (nd) Nestboxes: Find out how to provide, or make, nestboxes for birds in your garden, Available from: www.rspb.org.uk/advice/helpingbirds/nestboxes

APPENDIX A RELEVANT LEGISLATION AND POLICY

The Wildlife & Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981[15], as amended by the Countryside and Rights of Way Act (CRoW) 2000[16] and the Natural Environment and Rural Communities Act (NERC) 2006[17], consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive)[18], making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection; and
- Pick or uproot any wild plant listed under Schedule 8 of the Act. Schedule 9, Part II of the Act also lists many species for which it is an offence to plant, or otherwise cause to grow, in the wild. Any material containing Japanese knotweed is also identified as controlled waste under the Environment Protection Act 1990[19] and must be disposed of properly at licenced landfill according to the Environmental Protection Act (Duty of Care) Regulations 1991[20].

Habitat Regulations 2018 (as amended)

The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018[21] (the 'Habitat Regulations') are the principal means by which Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (the 'Habitats Directive') is transposed into law in England and Wales. The objective of the Habitats Directive is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora. The Directive lays down rules for the protection, management and exploitation of such habitats and species and makes it an offence to deliberately capture, kill or disturb wild animals protected under the Habitat Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

Natural Environment & Rural Communities (NERC) Act 2006

The NERC Act 2006 places a duty on local planning authorities to have due regard for biodiversity and nature conservation during the course of their operations, and thus ensures that biodiversity is a key consideration in the planning process.

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[15] Legislation.gov.uk *Wildlife and Countryside Act 1981 (as amended)* [online] Available from: https://www.legislation.gov.uk/ukpga/1981/69/pdfs/ukpga_19810069_en.pdf

[16] Legislation.gov.uk *The Countryside and Rights of Way Act 2000* [online] Available from: http://www.legislation.gov.uk/ukpga/2000/37/contents

[17] Legislation.gov.uk *Natural Environment and Rural Communities Act 2006*. [online] Available from: https://www.legislation.gov.uk/ukpga/2006/16/contents

[18] EUR Lex: Access to European Law. *Birds Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds* [online] Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147

[19] Legislation.gov.uk *Environmental Protection Act 1990,* [online] Available from: http://www.legislation.gov.uk/ukpga/1990/43/contents

[20] Legislation.gov.uk *Environmental Protection Act 1991* [online] Available from: http://www.legislation.gov.uk/uksi/1991/2839/made

[21] Legislation.gov.uk *The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018* [online] Available at: http://www.legislation.gov.uk/uksi/2018/1307/contents/made

APPENDIX B EXTENDED PHASE 1 HABITAT SURVEY REPORT (JUNE 2021)

Former Quinn Radiator Factory

Ecological Assessment

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Client	Gensler Europe Ltd.
Project	Former Quinn Radiator Factory, Ecological Assessment
Version	FINAL
Project number	P22-136 - Former Quinn Radiator Factory – Further Ecological Report

	Name	**Position**	**Date**
Originated	Kirsty Rogers	Senior Ecologist	08 July 2021
Reviewed	Owain Gabb	Director	08 July 2021
Updated with 2022 survey result	Kirsty Rogers	Senior Ecologist	28 February 2023
Approved for issue to client	Owain Gabb	Director	28 February 2023
Issued following client review	Kirsty Rogers	Senior Ecologist	07 March 2023

Disclaimer

This report is issued to the client for their sole use and for the intended purpose as stated in the agreement between the client and BSG Ecology under which this work was completed, or else as set out within this report. This report may not be relied upon by any other party without the express written agreement of BSG Ecology. The use of this report by unauthorised third parties is at their own risk and BSG Ecology accepts no duty of care to any such third party.

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Any recommendation, opinion or finding stated in this report is based on circumstances and facts as they existed at the time that BSG Ecology performed the work. The content of this report has been provided in accordance with the provisions of the CIEEM Code of Professional Conduct. BSG Ecology works where appropriate to the scope of our brief, to the principles and requirements of British Standard BS42020.

Nothing in this report constitutes legal opinion. If legal opinion is required, the advice of a qualified legal professional should be secured. Observations relating to the state of built structures or trees have been made from an ecological point of view and, unless stated otherwise, do not constitute structural or arboricultural advice.

Contents

1 Summary

Report purpose	Ecological site appraisal to inform the proposed redevelopment of the Former Quinn Radiator Factory, Newport.
Client and commission date	Gensler Europe Ltd.; June 2021.
Date and methods of survey	An extended Phase 1 habitat survey was completed by Kirsty Rogers on 30 June 2021. Further survey for great crested newt (GCN) to determine presence / likely absence within ponds adjacent to Site was completed in May – June 2022.
Key findings	There is one statutory designated site (The Gwent Levels – St Brides Site of Special Scientific Interest (SSSI)) located 176 m south of the Site boundary. The majority of the Site comprises existing development including buildings and unvegetated hardstanding. Boundary habitats including tall ruderal and ephemeral / short perennial habitat, areas of semi-improved neutral grassland and scattered scrub are of ecological interest due to their potential to support protected species. Nine ponds are present within 250m of the Site (off-Site, to the south), further survey for GCN (in five of these ponds) found no individuals / field evidence indicating GCN presence.
Potential impacts	In the absence of mitigation, the proposed development has the potential to result in indirect impacts (e.g., pollution effects) of habitats and species associated with the Gwent Levels SSSI. The development may also result in direct and indirect impacts to protected species including bats (foraging and commuting), badger, breeding birds, hazel dormouse, invertebrate species, reptiles, and other notable mammal species (hedgehog).
Measures to avoid and/or reduce impacts during the design phase	Mitigation will need to include: • Pollution prevention controls delivered through a Construction Environmental Management Plan (CEMP). • Sensitive lighting to avoid adverse impacts on bats and hazel dormice (if present). • Sensitive construction phase working methods to avoid impacts to protected species, including GCN (precautionary) badger, breeding birds, hazel dormouse (if present), reptiles and other notable mammal species (hedgehog).
Opportunities for biodiversity enhancement	Welsh biodiversity policy and legislation puts a duty on public authorities and developers to not only maintain biodiversity, but also include enhancements for nature conservation and biodiversity (see Appendix 3, paragraphs 9.10 – 9.14). Enhancement measures proposed include: • New tree, hedgerow, scrub, and grassland creation to benefit a range of protected and priority species. • New habitat creation within drainage scheme to benefit a range of aquatic / wetland species. Additional measures (to be incorporated within the final landscape design) may also include:

	• Incorporation of native species of local provenance into landscape design • Enhancement of any retained habitats and adopted sensitive management practices (i.e., reduced cutting regime and no pesticide use). • Incorporating habitat enhancement for reptiles, amphibians, invertebrates, and small mammals. • Including bat and bird boxes within the new building design.

2 Introduction

Background to commission

2.1 BSG Ecology was commissioned in June 2021 by Gensler Europe Ltd. to provide ecological baseline survey to inform the acquisition and proposed redevelopment of at the Former Quinn Radiator Factory, Celtic Way, Imperial Park, Duffryn, Newport (henceforth referred to as the 'Site').

2.2 An ecological appraisal of the scheme including a desk study, extended Phase 1 survey and a GCN survey has been undertaken. Survey work to inform the appraisal was undertaken in 2021 and 2022.

Site description

2.3 The Site comprises approximately 15.9 Ha of former industrial land, situated on the western outskirts of the City of Newport, and centred on Ordinance Survey National Grid Reference ST 27904 84114. Historical aerial imagery[1] suggests the original factory building was constructed in circa 2002, with a further large unit added in circa. 2007 on to land directly to the south. The Site was vacated in June 2019 and remains largely vacant barring occasional use for storage of materials.

2.4 The Site is largely characterised by built development. Five large inter-connecting warehouses and a separate office block, security cabins, and large areas of hardstanding are present. Towards the eastern Site boundary, surrounding the office block and parking zones, are areas of amenity grassland with ornamental planting and scattered trees. Other habitats close to the Site boundaries are less intensively managed, comprising areas of tall ruderal vegetation and semi-improved neutral grassland with scattered scrub.

2.5 The Site is located on the southern edge of Imperial Park. Occupied industrial units are situated immediately to the north. To the south, is an area of unmanaged rough grassland, scrub and scattered trees with several ponds and Nant-y-moor reen (located approximately 50 m to the south and west) which in turn flows into the wider reen system of the Gwent Levels (to the south). To the west, beyond a stretch of dual carriage way (off the A48), a band of woodland extends north and south, with mixed farmland beyond.

Description of project

2.6 The proposed development will include the demolition of the existing structures on the Site, and the erection of purpose-built data centre buildings with associated infrastructure and landscaping. The masterplan for the proposed development remained under review at this time of this report. However, it is understood from the draft masterplan design (ref. CWL01-02L-B-01) provided, that boundary features / vegetation will be retained and enhanced. The proposed landscaping scheme includes native woodland, grassland and scrub planting and the creation of three large attenuation ponds (with marginal planting) along the southern edge of the Site. Additional landscaping features include a green roof, rain garden and a small area of 'garden' / ornamental planting.

Aims of study

2.7 The purpose of this Ecological Appraisal is to review and assess the likely ecological impacts of the proposed redevelopment based on desk study and ecological survey and taking account of all relevant biodiversity policy recommendations and requirements.

[1] Google Earth Pro 7.3.3.7786 (accessed on 7 July 2021)

3 Methods

Desk study

3.1 A data request was made to the South East Wales Biodiversity Records Centre (SEWBReC) to obtain information on non-statutory designated sites and records of protected, invasive or otherwise notable species. The data request was for records from within the Site and a 2 km search radius[2] from the Site boundary (presented in **Figure 1**).

3.1 The desk study also involved a review of publicly available information including the UK Government's MAGIC[3] website and Google Earth Pro[4]. Data from both sources was most recently accessed on 7 July 2021.

3.2 The MAGIC database was used to establish the presence of statutory designated sites of nature conservation interest in relation to the proposed development. Google Earth Pro was used to review recent and historical aerial photography of the local area, and to provide ecological context for the results of the Site assessment.

Field survey

Phase 1 habitat survey

3.3 A Phase 1 habitat survey was completed by Kirsty Rogers on 30 June 2021. The survey method was based on industry standard guidance (JNCC, 2010). Habitats present at the Site were identified and mapped, with any features of ecological interest recorded as 'target notes'.

3.4 The survey was extended, in accordance with IEA (1995), to include an assessment of the suitability of the habitats present to support protected (and non-native invasive) species.

Preliminary Roost Assessment (PRA) of buildings and trees

3.5 During the extended Phase 1 habitat survey, a daytime ground level assessment was carried out of each of the buildings and trees, in line with industry standard guidelines (Collins, 2016). The purpose of the assessment was to identify any Potential Roost Features (PRF) suitable for use by bats.

3.6 The assessment involved an external and internal building inspection for features which could provide bats with access into roosting spaces within them or which provide roosting spaces (such as gaps under roofing tiles, gaps in ridge tiles, gaps in soffit boxes) in their own right. Evidence of the presence of bats such as bat droppings on windows, windowsills, walls, and the ground, or staining from fur around possible roost access / egress points was searched for during the assessment.

3.7 The buildings and trees surveyed were categorised by their suitability to support roosting bats as outlined in **Table 1,** adapted from industry standard guidelines (Collins, 2016**).**

[2] SEWBReC allocate a "mobile" buffer to species to demonstrate their potential range. This is dependent on the individual species and their ability to travel significant distances within their ranges. Therefore, whilst data is requested for 2 km, records are frequently provided for species recorded up to 2 km beyond the search radius.
[3] Available at www.magic.defra.gov.uk/magicmap.aspx
[4] Google Earth Pro 7.3.3.7786.

Table 1: Guidelines for assessing the potential suitability of a structure or tree for roosting bats.

Suitability	Description
Negligible	A structure or tree with negligible features likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically, but which do not provide enough space, shelter, protection, appropriate conditions and / or suitable surrounding habitat to be used on a regular basis by a larger number of bats. A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but are unlikely to support a roost of high conservation status.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by a larger number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat.

Limitations to method

3.8 Two of the units / buildings (Unit 1B and security cabin (west); **Figure 2**) on Site were locked during the survey and an internal inspection could not be completed. Security cabin (east) was occupied / in use and so was viewed from outside only, due to Covid restrictions in place at the time. This is taken into consideration within the assessment stage and is not considered to be a significant constraint.

Habitat Suitability Index

3.9 Eight ponds within 250 m of the Site boundary were assessed for their suitability to support GCN via the application of the Habitat Suitability Index (HSI) assessment method (Oldham *et al.*, 2000). The HSI scoring method is a quantitative means of evaluating habitat quality for great crested newts using ten suitability indices:

a. UK location,
b. Pond surface area,
c. No. of years out of 10 in which the pond dries out,
d. Water quality,
e. Percentage shade,
f. No. of waterfowl,
g. Presence of fish,
h. No. of ponds within 1 km,
i. Area of suitable terrestrial habitat within 500 m and accessibility of this habitat,
j. Percentage of macrophyte cover.

3.10 The HSI provides a numerical index between 0 and 1 where scores closer to 0 indicate poor habitat with lower probability of great crested newt occurrence and those closer to 1 represent optimal habitat with a higher probability of occurrence. A score of ≥ 0.5 is generally considered indicative that the pond could be suitable to support a population of breeding great crested newts (ARG UK, 2010). Pond locations are shown on **Figure 3.**

Limitations to method

3.11 Pond 6 was not subject to a HSI as dense surrounding bramble and willow scrub limited visibility and access to the pond banks / water edge. This has been taken into consideration within the results and assessment sections below.

GCN presence / likely absence survey

3.12 GCN surveys were carried out on five ponds within 250 m of the development boundary (pond locations are illustrated on **Figure 3**). Four survey visits were undertaken at ponds 1, 3, 7, 8 and 9 between 5 and 25 May 2022.

3.13 Waterbodies were surveyed using the following three survey methods (where possible, see **limitation to method**):

- **Egg Search (ES):** Submerged and floating vegetation and leaf litter was inspected for newt eggs at each waterbody.
- **Torching (T):** A torch survey was carried out on each of the four visits. This consisted of a systematic search made by walking the perimeter of the pond once using a 1,000,000-candlepower torch searching for amphibians. All amphibians recorded were identified to species, counted, and sexed where possible.
- **Bottle Trapping (BT)**: Bottle traps were placed around the pond margins overnight. Traps were placed in and among vegetation as well as in open water. An air bubble was left in each trap to maintain oxygen levels. The bottles were then checked early the following morning for the presence of newts. Where possible bottle traps were arranged around the margins of the pond at approximately one trap every 2 m.

3.14 The dates and weather conditions during each visit are presented in **Table 2.**

Table 2: 2022 GCN survey visit details

Visit No.	Date	Surveyors[5]	Survey Methods	Weather Conditions[6]
1	05 – 06 May	**KR** + RS	BT[7], T, ES	Temp 11°C (overnight low 9°C). Light drizzle. Bft 4 (W).
2	10 – 11 May	**KR** + JC	BT, T, ES	Temp 11°C (overnight low 10°C). Showers overnight (after torching). Bft 3 (SW).
3	12 – 13 May	**KR** + CA	BT, T, ES	Temp 10°C (overnight low 10°C). Heavy rain the day before. 4 Bft (WSW)
4	24 – 25 May	**JAG** + CA	BT, T, ES	Temp 9°C (overnight low 6°C). Rain during day before survey. 3 Bft (WSW).
KR – Kirsty Rogers , JC – Joanne Conway, CA – Charlotte Alsop, JAG – James Garside, RS – Rosie Sparks.				

Limitations to method

3.15 It was not possible to bottle trap Pond 1 due to the low water levels during the survey period. However, due to the small size of the pond, good visibility and access to the whole pond edge, egg searches and torching is considered sufficient to be confident in a presence / likely absence result.

3.16 It was not possible to bottle trap Pond 9 due to low water levels during the survey period. Access to approximately 40 % of the pond was possible for torching and egg searching.

[5] Natural Resources Wales (NRW) GCN survey licence holders are indicated in bold.
[6] Bft - Beaufort wind force scale.
[7] Pond 1 and 9 were not bottle trapped (see **Limitations to method**, paragraph 3.15).

3.17 Pond 8 was not torched during survey visit 4, due to health and safety concerns following an interaction with a member of the public using an air rifle in the vicinity of the pond.

3.18 The following ponds were not accessible due to health and safety concerns, or access restrictions, and were not surveyed:

- Pond 2 – pond banks are steep and access to water's edge was limited by dense surrounding bramble and willow scrub.
- Pond 4 – access to the water's edge was limited by the ponds high, steep banks and dense surrounding willow scrub. This combined with significant quantity of fly-tipped rubbish from the adjacent roadside meant this pond was not surveyed due to concerns for surveyors' health and safety.
- Pond 5 – access to the water's edge was limited by dense surrounding willow scrub (approximately 5 % of pond edge accessible). Where bankside access was possible emergent vegetation covering the water's surface restricted torching, and low water levels (> 5 cm) and emergent vegetation prevented bottle trapping.
- Pond 6 - no access to the pond bank / water edge due to dense surrounding bramble and willow scrub.

3.19 These limitations have been taken into consideration within the results and assessment sections below.

Personnel Involved

3.20 Summaries of the qualifications and experience of personnel involved in the work, and their role in delivering it, are outlined below.

3.21 Kirsty Rogers MZoo, ACIEEM: Kirsty is a Senior Ecologist at BSG Ecology. She has worked as a professional ecologist since 2013 and has experience in numerous ecological assessments for small- and large-scale projects, including bat roost assessments, and holds a bat survey licence (S089761/1) and a GCN survey licence (S098966/1) with Natural Resources Wales. Kirsty was responsible for carrying out the field work for this project and is the author of this report.

3.22 The GCN surveys were led by a licenced GCN surveyors, including Kirsty Rogers (above) and James Garside (BSc, QCIEEM) who holds a survey licence for GCN (S088796/1) with Natural Resources Wales. Surveyors were assisted by Senior Ecologists Joanne Conway (BSc, PG Cert, QCIEEM) and Rosie Sparks (BSc MSc ACIEEM) and Consultant Ecologist Charlotte Alsop (QCIEEM), who are experienced in GCN survey.

3.23 Owain Gabb has worked as a professional ecologist since 1999 and as an ecological consultant since 2003. He is a full member of CIEEM, and a Chartered Environmentalist. Owain has technically directed or managed the ecological inputs to onshore wind farms, solar schemes, grid connection projects, power stations (new nuclear and decommissioning schemes), energy from waste plants, parkland restoration schemes, residential and mixed-use developments, and provided support to local planning authorities in evaluating the ecological evidence base for large planning applications. Owain was the reviewer of this report.

3.24 A summary of each BSG staff member's experience and competence as a professional ecologist is provided at http://www.bsg-ecology.com/people/.

4 Results and Evaluation

4.1 In this section the results of fieldwork and desk study are brought together. Interpretation of the results and an assessment of the potential impacts of the proposed development are included in **Section 5**.

Designated Sites

4.2 The desk study identified one statutory designated site and seven non-statutory designated sites within the 2 km search radius. The results are presented in **Table 3** and their locations are provided on **Figure 1**.

Table 3: Summary of designated sites within 2 km of the Site.

Statutory Designated Sites

Site Name and Designation[8]	**Key Interest Features**	**Distance / direction from Site**
The Gwent Levels – St Brides SSSI	The Gwent Levels comprises an extensive area of reclaimed wet pasture and is the largest area of its kind in Wales. The Levels are notified for the rich and diverse plant species and communities that occur due to the varied characteristics of the reens and the differing management regimes they are subject to. The aquatic invertebrate fauna is also particularly diverse, with many rare or notable species present, and the area is important in a regional context for its snails and for its dragonfly assemblage.	176 m south

Non-Statutory Designated Sites

Site Name and Designation[5]	**Key Interest Features[9]**	**Distance / direction from Site**
LG Duffryn Site 2	Natural grassland habitat comprising a large area of neutral grassland adjacent to Gwent Levels SSSI.	65 m east
LG Duffryn Site 1 (South Lake Drive)	Standing open water, reed-bed and birds assemblage including Cetti's warbler *Cettia cetti.*	195 m east
Celtic Springs Site SINC	Post-industrial mosaic habitat, neutral grassland, and calcareous grassland.	550 m north
Duffryn Pond SINC	Pond with emergent swamp vegetation, which supports a range of important invertebrate, plant, reptile, amphibian, and mammal species.	965 m northeast
Cwm Pensidan SINC	Ancient semi-natural woodland, dominant species include ash *Fraxinus excelsior* and alder *Alnus glutinosa.*	1.5 km north
White Gates SINC	Neutral grassland - "Relatively un-improved", semi-improved neutral grassland, species rich.	1.8 km northwest
Afon Ebbw River SINC	Major river system with associated semi improved neutral grassland and marshy grassland, swamp, scrub, and semi-natural woodland. Associated species include bulbous foxtail *Alopecurus bulbosus* kingfisher *Alcedo atthis*, sand martin *Riparia riparia*, grass snake *Natrix helvetica*.	1.9 km northeast

[8] Site of Special Scientific Interest (SSSI), Site of Interest for Nature Conservation (SINC)
[9] Designation information sourced from Newport Deposit Local Development Plan 2011-2026 (Newport Council) adopted June 2013.

Habitats

4.3 The habitats present on Site are described in **Table 4** and illustrated in **Figure 2**. Photographs and target notes are included in **Appendix 5**.

Table 4: Summary of habitats present on and adjacent to Site.

Habitat	Description	Preliminary evaluation
Buildings, hardstanding / bare ground and ephemeral / short perennial	Most of the Site is taken up with existing development, comprising five large inter-connecting warehouses, a two-storey office block, two single-storey security cabins, with un-vegetated hard-standing forming the access infrastructure throughout. Several gravelled areas within the hardstanding are colonised with a mixture of ruderal and ephemeral/short perennial vegetation (TN 7 and 8) including willowherb, herb robert *Geranium robertianum* ragwort *Senecio jacobaea*, false-oat grass *Arrhenatherum elatius*, colt's-foot *Tussilago farfara*, ribwort plantain *Plantago lanceolata*, Canadian fleabane *Conyza canadensis*, rough sow-thistle *Sonchus asper*, black mustard *Brassica nigra,* smooth hawksbeard *Crepis capillaris* and occasional scarlet pimpernel *Anagallis arvensis* and bristly oxtongue *Helminthotheca echioides.* All buildings are constructed of modern materials, and are circa, 20 years old. Full buildings descriptions are provided in **Appendix 3**.	Areas of ephemeral / short perennial vegetation on-Site do not meet the criteria to qualify as priority habitat (JNCC, 2010)[10] and are unlikely to qualify for local designation (i.e., post-industrial land or mosaic, Gwent Wildlife Trust, 2004)[11].
Amenity grassland	Amenity grassland is located around the office building and eastern Site boundary. Largely managed for amenity purposes, the sward is short and uniform with few herb species present (TN 1). Species present include abundant false-oat grass and Yorkshire fog *Holcus lanatus*, with frequent white clover *Trifolium repens*, daisy *Bellis perennis*, meadow buttercup *Ranunculus acris*, self-heal *Prunella vulgaris*, lesser trefoil *Trifolium dubium*, perennial rye-grass *Lolium perenne*, cock's-foot grass *Dactylis glomerata*, common bent *Agrostis capillaris,* dandelion *Taraxacum officinale* and ribwort plantain. To the east of the Site (TN 2) the sward is mown, but less uniform with bare patches present. Here broad-leaved dock *Rumex obtusifolius*, spear thistle *Cirsium vulgare*, ragwort, common centaury *Centaurium erythraea,* silverweed *Argentina anserina* and localised patches of soft-rush *Juncus effusus* also occur occasionally.	This habitat does not meet the definition of any priority habitat (Maddock, 2011) or local designation (Gwent Wildlife Trust, 2004).
Semi-improved neutral grassland	Semi-improved grassland occurs along a west-facing bank towards the east of the Site (TN 3). Here the sward has less intensive management and is fairly	This habitat is does not meet the definition of any priority habitat (Maddock, 2011) or

[10] OMH must meet all five of the following criterion: 1. At least 0.25 Ha in size. 2. Known history of / evidence of disturbance. 3. Vegetation comprising early successional communities consisting mainly of stress tolerant species. 4. Un-vegetated, loose bare substrate and/or pools present. 5. Spatial variation, forming a mosaic of one or more early successional communities plus base substrate (JNCC, 2010). The ephemeral / short perennial vegetation on Site does not meet criterion 1 as it is less than 0.25 Ha in size.

[11] Sites with a high diversity of native and archaeophyte species can be selected or if 20 or more plant species are present from the combined lists of grassland species (Gwent Wildlife Trust, 2004).

	herb rich. Species present include frequent greater stitchwort *Rabelera holostea*, red clover *Trifolium pratense*, spear thistle, with occasional hairy tare *Vicia hirsuta*, thyme-leaved speedwell *Veronica serpyllifolia*, pignut *Conopodium majus*, bristly oxtongue, smooth hawksbeard, cut-leaved cranesbill *Geranium dissectum*, hedge woundwort *Stachys sylvatica*, greater bird's foot trefoil *Lotus pedunculatus*, meadow buttercup, ribbed melilot *Melilotus officinalis*, Yorkshire fog, false oat grass, common bent and rough meadow grass *Poa trivialis.* At TN 3, under scattered scrub was locally frequent bee-orchid *Ophrys apifera.* At TN 4 is a second area of longer / unmown grassland, with fewer herb species present. This is similar in composition to amenity grassland with species including soft brome *Bromus hordeaceus* and meadow oat grass *Helictotrichon pratense* also present.	local designation including Neutral Grasslands (as per criterion listed in, Gwent Wildlife Trust, 2004).
Tall ruderal vegetation and ephemeral / short perennial	Located along the northern boundary (TN 6), southern boundary (TN 11) and a small bank adjacent to a car park (TN 5) are successional communities of tall ruderal vegetation and ephemeral / short perennial encroaching from off-Site habitats. Typically for this habitat type, botanical composition is variable and lacks a clearly dominant species. Species present include frequent ragwort, thistle sp. *Cirsium sp.,* bramble *Rubus fruticosus* and rosebay willowherb *Chamaenerion angustifolium.* Occasionally occurring species include broad-leaved everlasting pea *Lathyrus latifolius*, smooth hawksbeard, scarlet pimpernel, oxtongue, perforate St John's-wort *Hypericum perforatum*, red valerian *Centranthus ruber* herb robert, yellow wort *Blackstonia perfoliate*, creeping cinquefoil *Potentilla reptans*, common nettle *Urtica dioica.* Other species occurred rarely.	As above, areas of ephemeral / short perennial vegetation on-Site do not meet the criteria to qualify as priority habitat (JNCC, 2010) and are unlikely to meet the criteria for local designation (i.e., post-industrial land or mosaic, Gwent Wildlife Trust, 2004).
Scattered scrub	Located along the eastern facing bank with semi-improved grassland at TN 3, comprising immature crack willow *Salix fragilis*, butterfly bush *Buddleja davidii*, bramble, goat willow *Salix caprea*, cherry sp. *Prunus sp*. and ash *Fraxinus excelsior.* Along the southern boundary a small patch of immature white poplar *Populus alba,* bramble and butterfly bush is located at TN 12.	This habitat does not meet the definition of any priority habitat (Maddock, 2011) or local designation (Gwent Wildlife Trust, 2004).
Dense scrub	A small area of dense scrub is located at the north-eastern Site boundary (at TN 13) extending off-Site to the north. Species presents include frequent dogwood *Cornus sanguinea*, field maple *Acer campestre*, dog-rose *Rosa canina*, cherry, bramble and hazel *Corylus avellana*.	This habitat does not meet the definition of any priority habitat (Maddock, 2011) or local designation including Scrub Communities [12] (Gwent Wildlife Trust, 2004).
Scattered trees	Several scattered trees were recorded over areas of amenity grassland on Site (TN 9 and 10), comprising abundant cherry with occasional pine sp. *Pinus sp*. and Norway maple *Acer platanoides*.	This habitat is unlikely to meet the definition of any priority habitat (Maddock, 2011) or meet the criteria for

[12] "Structurally diverse and species-rich mixed scrub sites (including at least 6 native woody species)" or "significant stands of gorse" (Gwent Wildlife Trust, 2004).

		local designation (Gwent Wildlife Trust, 2004).
Introduced shrub / ornamental planting	Several areas of ornamental planting are found close to the eastern Site entrance and office buildings (at TN 7 and 10). These include largely non-native species such as bamboo *Bambusa sp.*, Japanese maple A*cer sp.*, dogwood, rose sp. *Rosa sp.*, pendulous sedge *Carex pendula,* Norway maple, barberry sp. *Berberis sp.*, lavender-cotton *Santolina chamaecyparissus*, foxgloves *Digitalis sp.* and variegated spindle sp. *Euonymus sp.*	This habitat does not meet the definition of any priority habitat (Maddock, 2011) or meet the criteria for local designation (Gwent Wildlife Trust, 2004).
Intact species-poor hedgerow	Several lengths of well managed laurel *Laurus nobilis* hedgerow were noted across the Site (TN 14) over areas of amenity grassland.	This habitat does not meet the definition of any priority habitat (Maddock, 2011) or meet the criteria for local designation (Gwent Wildlife Trust, 2004).

Protected species

4.4 SEWBReC returned a total of seven hundred and ninety-five records for fifty-seven different species. The results are summarised in **Table 5**; consideration is given to these records and to the habitats present on Site when determining the potential for the Site to support protected species.

Table 5: Summary of protected species and habitat suitability

Species	**Data search results**	**Habitat suitability**
Amphibians Great crested newts *Triturus cristatus* are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (WCA)	SEWBReC returned no records for great crested newt (GCN) within the search radius. Other amphibian species records returned include common toad *Bufo bufo*, Common toad is listed in Section 7 of the Environment (Wales) Act 2016.	There are no waterbodies within the Site boundary. There are nine ponds, located off-Site, within 250 m of the Site boundary, at least six of which are connected to the site for storm water drainage. These are located to the south and east, within rough grassland and scrub habitat and LG Duffryn Site 1 & 2 SINCs (pond locations are shown on **Figure 3**). A HSI was undertaken of eight of the nine ponds. Three scored 'average' suitability and the remaining five 'below average' or 'poor', with the majority scoring low on water quality and presence of fish and / or waterfowl. Full results and pond photos are in **Appendix 2**. Presence / likely absence survey recorded no GCN in any of the ponds. Smooth newt *Lissotriton vulgaris* were recorded in low numbers (peak count of 3) in ponds 7 and 8. One 'small newt' egg was found during an egg search of pond 7. Full results are in **Appendix 3**. Grassland, scrub, and tall ruderal habitat on-Site offers suitable but limited terrestrial habitat for all amphibian

		species, being primarily restricted to Site boundaries, with some connectivity off-Site to the wider surrounding area.
Badger Badgers *Meles meles* are protected under the Protection of Badgers Act (1992) and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended).	SEWBReC returned three records of badger within the search radius, all located beyond 2 km from the Site boundary to the east.	No badger setts or field evidence indicating badger activity was recorded during the survey. The Site is largely secured with mesh security fencing limiting access for foraging or commuting individuals onto Site. Habitats immediately off-Site (to the south) offer suitable foraging, commuting, and sheltering resource.
Bats Bats are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and under Schedules 5 & 6 of the Wildlife and Countryside Act 1981 (as amended).	SEWBReC returned thirty-five records of at least eight species of bat including brown long-eared *Plecotus auratus*, common pipistrelle *Pipistrellus pipistrellus*, Daubenton's *Myotis daubentonii*, greater horseshoe *Rhinolophus ferrumequinum*, Nathusius's pipistrelle *Pipistrellus nathusii*, noctule *Nyctalus noctule,* soprano pipistrelle *Pipistrellus pygmaeus* and whiskered / Brandt's bat agg. *Myotis mystacinus / brandtii* agg. Of these, three records were of bat roosts including a hibernation roost of noctules associated with Tredegar House located 1.4 m east, a brown long-eared hibernation roost located 2 km north-west, and a pipistrelle sp. maternity roost located 2.3 km to the north-east. The remaining records are field records of commuting / foraging bats largely associated with residential areas of Newport City (to the northeast) and Castleton (to the west), Tredegar House grounds (located 1 km north-east) and the Ebbw River corridor beyond (located 1.9 km north-east).	All buildings on Site have negligible suitability for roosting bats (see **Appendix 4** and **5**). The trees on Site are small, immature, or scrubby with no obvious areas of damage or decay which may offer PRFs and are assessed as of negligible suitability. Most of the Site is likely to be of low value for foraging or commuting bats, given the lack of vegetation. Longer grassland habitats, scrub and boundary features (both on and adjacent to Site) are likely to act as a commuting corridor and foraging resource for bats locally and are assessed as of moderate suitability (i.e., continuous habitat connected to the wider landscape, Collins, 2016).
Birds All nesting birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). Greater protection is afforded to species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).	Five-hundred and fifty-one records of one-hundred and seven bird species were returned by SEWBReC. These include, thirty that are listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) including peregrine *Falco peregrinus*, little ringed plover *Charadrius dubius*, fieldfare *Turdus pilaris* and Cetti's warbler *Cettia cettia* recorded within 1 km of the Site.	A recently successful (*pers. comms.* with Site staff) corvid nest was noted within Unit 5. Within the Site, the majority of suitable nesting habitat for birds is present within or upon buildings or within boundary habitats / scrub. However, it was noted that there was little gull activity on Site, and no evidence of gulls breeding on the building / unit roofs was noted from ground level[13].

[13] Liaison with a local bird ringing group (conducting gull ringing on similar sites within South Wales) indicated herring gull *Larus argentatus* and lesser black-backed gull *Larus fuscus* were fledging on from late-June / early-July in the 2021 season. The survey was completed in late June 2021, and adults and territorial activity would still be notable on Site, if present.

	Other species recorded include twenty-six species listed in Section 7 of the Environment (Wales) Act 2016, the closest of these records is located more than 600 m from the Site boundary.	An incidental observation of a peregrine hunting racing pigeon over the Site was also noted.
Hazel dormouse Hazel dormouse *Muscardinus avellanarius* is protected under the Conservation of Habitats and Species Amendment) (EU Exit) Regulations 2019 and under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).	SEWBREC returned thirty-one records of hazel dormouse within the search radius. The closest record is located 909 m southeast associated with Percoed Lane. The remaining records are associated with the M4; the closest is located 1 km north with the others extending west along the M4 and A48(M) corridor.	Suitable habitat for dormouse is limited to the small area of scrub at the north-western corner of the Site (TN 13, extending north off-Site). There is no onward connectivity through the Site to other suitable off-Site habitats, therefore on-Site habitats, if used by dormice, would be likely to form the extreme edge of a range.
Invertebrates	SEWBReC returned four-hundred and eighteen records of one-hundred and eighteen invertebrate species within the search radius. Thirty-four records were returned within the Site boundary these include twenty-five lepidoptera species and brown-banded carder-bee *Bombus humilis*, which is listed under Section 7 of the Environment (Wales) Act 2016.	Where present, the mosaic of habitats on Site including grassland, ephemeral / short perennial, tall ruderal and scrub offers habitat suitable for supporting invertebrate species. However, unmanaged habitats, immediately off-Site, likely offer an extensive resource which is well-connected to other habitats known to support a range of invertebrate species (i.e., Gwent Levels).
Other protected / notable species Listed in Section 7 of Environment (Wales) Act 2016.	SEWBReC returned twenty-nine records of other mammal species including hedgehog *Erinaceus europaeus*, polecat *Mustela putorius* and brown hare *Lepus europaeus* within the search radius. The closest record is of a hare, located 528 m north associated with the A48.	Unmanaged grassland and scrub on Site provide limited, but poorly connected habitat, suitable for supporting hedgehog. Polecat and hare are more commonly associated with agricultural habitats than heavily developed industrial sites. Therefore, the Site is unlikely to support either species.
Otter and water vole Otter *Lutra lutra* is protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Schedules 5 & 6 of the Wildlife and Countryside Act 1981 (as amended). Water vole *Arvicola amphibius* is afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).	SEWBReC returned seventeen records for otter and seven records for water vole within the search radius. The closest record of otter is located 824 m south, associated with Percoed reserve on the Gwent Levels. The closest record of water vole is located 1.1 km south associated with farmland and the Gwent Levels reen systems.	There are no suitable aquatic habitats on Site to support otter or water vole. Reen systems (such as Nant-y-moor Reen located immediately off-Site to the west) and connected ponds (off-Site to the south) may offer suitable habitat to support either species in the immediate surrounding area.

Reptiles All reptiles are afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).	SEWBReC returned fifteen records for reptiles within the search radius for all four common species of reptile. The closest record is of adder *Vipera berus*, located 810 m south-west in Marshfield. Other records are associated with the Gwent Levels and residential areas of Newport City to the east.	Most of the Site is unsuitable for reptiles, offering little to no cover or foraging opportunities. Tall ruderal and ephemeral / short perennial habitats adjacent to the Southern site boundary and unmanaged grassland provide some, limited, habitat foraging and basking habitat for support reptile species such as common lizard and slow worm.
Non-native, invasive plants Listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).	SEWBReC returned one-hundred and eighty-four records of seventeen species of invasive non-native plants. The closest record is of Japanese knotweed *Fallopia japonica* located 485 m to the north. Other records include Japanese rose *Rosa rugosa,* giant-rhubarb *Gunnera tinctoria,* Himalayan cotoneaster *Cotoneaster simonsii* and New Zealand pigmyweed *Crassula helmsii.*	No evidence of non-native invasive plant species listed on Schedule 9 was recorded during the survey.
Protected plants	SEWBReC returned ten records of four species of plant listed in Section 7 of the Environment (Wales) Act 2016, these include tubular water-dropwort *Oenanthe fistulosa* located > 1.5 km from the Site boundary and associated with arable fields within the Gwent Levels.	No protected flora species / species listed on Section 7 of the Environment (Wales) Act 2016 were recorded during the survey.

5 Potential Impacts and Recommendations

Designated sites

Statutory designated sites

5.1 One statutory designated site (The Gwent Levels – St Brides SSSI) was identified within the search radius. Direct impacts (e.g., removal or modification) of habitats associated with the SSSI are not anticipated as a result of development of the Site, due to the distance between. However, indirect impacts (e.g., pollution effects) through run-off during construction through storm drains into adjacent reen systems, may result in degradation pr physical damage of habitats and / or impacts to protected species associated with the SSSI.

Proposed safeguarding / mitigation

5.2 Any proposed works will need to be carefully planned and controlled to ensure that no construction materials or pollutants can enter adjacent water course. It is anticipated appropriate avoidance and mitigation measures to prevent direct and indirect damage or degradation to retained habitats would be incorporated into a Construction Environmental Management Plan (CEMP) for the Site and include detailed pollution prevention measures.

5.3 The proposed development SuDS scheme / drainage design should seek to maximise biodiversity value in accordance with Welsh Government guidance[14] and will provide the opportunity to deliver biodiversity enhancement on Site. The SuDs scheme "*should aim (where appropriate) to be similar to, linked with, and / or supportive of the natural and semi-natural local habitat and associated species*" (Welsh Government, 2018), including species associated with the Gwent Levels SSSI.

Non-statutory designated site

5.4 Seven non-statutory designated sites were identified within the search radius, the closest is LG Duffryn Site 2 SINC (located 65 m east). It is not anticipated that identified SINC sites will suffer direct impacts (e.g., removal or modification) or indirect impacts (e.g., noise or visual disturbance or pollution effects) as a result of the development of the Site, due to the distance and lack of connectivity between the Site and SINC habitats.

Habitats

5.5 Boundary habitats (i.e., tall ruderal vegetation and ephemeral / short perennial), semi-improved neutral grassland and scattered scrub within the Survey Area are of ecological interest due to their potential to support a range of protected and priority species.

5.6 Built habitats, amenity grassland and ornamental planting are of low ecological value and pose no issue with regard to development.

Proposed safeguarding / mitigation

5.7 Boundary vegetation, semi-improved natural grassland and scrub should be retained and enhanced within the proposed development to reduce potential impacts to protected species. Additionally, retaining and reducing loss of such habitats will facilitate overall enhancement on-Site, in line with national and local policy requirements.

Protected species

5.8 The potential for impacts on protected species (in the absence of mitigation), recommendations for further survey, mitigation and consultation are presented within **Table 6**. Detail on legislative protection for each species is provided within **Appendix 6.**

[14] Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems (Welsh Government, 2018).

Table 6: Further survey, potential impacts, and mitigation recommendations for protected species.

Species	Further Survey	Potential Impacts	Avoidance/Mitigation Actions
Amphibians	No further survey recommended.	Limited risk of killing/injury and loss of on-Site terrestrial habitats that are suitable for use by GCN (if present). Killing/injury of Section 7 species (common toad if present). Indirect impacts through run-off and pollution effects of off-Site ponds.	No GCN were recorded during further survey work, however due to survey limitations a precautionary approach is recommended to avoid impacts to this species, if present. Sensitive working methods adopted during the construction phase including pollution prevention measures (as above) and supervision of site clearance works by a suitably qualified Ecological Clerk of Works (ECOW). Retain rough grassland, scrub and boundary habitats and connectivity across the Site including an appropriate buffer.
Badger	Pre-works construction inspection for signs of badger is recommended to identify any setts on Site or within the immediate surrounding habitat (including third-party land to the south)	If badgers start using the Site, there is potential for entrapment during construction phase and / or the destruction of a Sett.	Precautionary approach to be adopted through sensitive working methods during the construction phase, including covering excavations and pipes, and appropriate storage of chemicals etc.
Bats	Given the location of the Site (at the edge of suitable bat foraging habitat), retention of boundary / linear features and the understanding[15] that security lighting is used on Site, it is anticipated that any bat population utilising habitats on and adjacent to the site is likely to be made up of commonly occurring, light-tolerant species. As such, no further survey is required to inform proportionate avoidance measures.	Disturbance or abandonment of off-site roosts through lighting impacts.	A sensitive lighting scheme to be incorporated during site design for construction and operational phases to avoid light spill onto retained habitats and potential off-Site features (i.e., mature trees to the west and habitats to the south), such measures can be secured though an appropriately worded planning condition.
Breeding Birds	No further survey recommended.	Loss of nesting and foraging habitat. Damage or destruction of active nests.	Demolition of buildings and removal of any woody vegetation including dense scrub (if required), should be conducted outside of the breeding season (March to August as a guide) or following a pre-works check for nesting birds and with a suitably qualified Ecological Clerk of Works (ECoW) present.
Hazel Dormouse	No further survey recommended.	Limited risk of killing/injury (if present).	Suitable habitats on Site are limited to boundary features, with no onward connectivity. Boundary habitats will be

[15] Confirmed by email from Joost Lansbergen on 23 February 2022.

Species	Further Survey	Potential Impacts	Avoidance/Mitigation Actions
		Loss of a small area of suitable habitat.	retained as part of the Site design. A suitable buffer from boundary features should be maintained during construction works on Site. IF any clearance of dense scrub habitat is proposed, it should be completed using a precautionary approach and sensitive working methods during the construction phase. Sensitive lighting scheme to be incorporated during Site design for construction and operational phases to avoid light spill onto retained habitats, such measures can be secured though an appropriately worded planning condition.
Invertebrates	No further survey recommended.	Loss / fragmentation of habitats.	Retain a mosaic of habitats, boundary features and connectivity across the Site within the Site design. Enhancement of retained features through appropriate management and / or appropriate plug planting.
Other protected/ notable species (hedgehog)	No further survey recommended.	Killing/injury if present. Damage, destruction and/or fragmentation of habitats.	Sensitive working practices during construction (i.e., no uncovered excavations, appropriately store chemicals and capping exposed piping) should be adopted.
Reptiles	No further survey recommended.	Killing/injury (if present). Damage, destruction of habitats.	Suitable habitats are limited to boundary features on Site and should be retained. If clearance is required, this will be completed following an appropriate sensitive working method statement which is likely to include supervision of site clearance works by a suitably qualified ECoW.
Non-native, invasive plants	No further survey required.	None anticipated.	None required.
Protected plants	No further survey required.	None anticipated.	None required.

Biodiversity Enhancement

5.10 Section 6 of the Environment (Wales) Act 2016 places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of their functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'.

5.11 Proposed enhancement incorporated within the draft Site design includes:

- Native tree, hedge, and scrub planting along boundary features, to provide continued connectivity across the Site and provide a continued foraging / sheltering resource to benefit foraging bats and breeding birds.
- Increasing the extent of habitats across the Site, including tree, scrub, and grassland planting within the Site to benefit a range of protected and priority species. This includes recreating areas of species-rich grassland to benefit terrestrial invertebrate species (i.e., brown-banded carder bee).
- Creation of three Sustainable Drainage Scheme (SuDS) ponds or basins to be designed to benefit wetland species, aquatic invertebrates, and amphibians).

5.12 Additional enhancement measures within the final landscape plan / design may also include:

- Inclusion of native species of local provenance into landscape planting design.
- Sensitive management of retained and created habitats to maximise species and structural diversity. This may include minimal pesticide / chemical use and a reduced mowing / cutting regime at specific times throughout the year (i.e., to allow flora to seed). This would benefit a range of protected species including reptiles, amphibians, bats, birds, invertebrates, and small mammals.
- Log piles or hibernacula can be incorporated into areas of retained habitat to benefit reptiles, amphibians, invertebrates, and small mammals.
- Bat and bird boxes can be included within the building design to provide additional roost/nesting resources.

6 References

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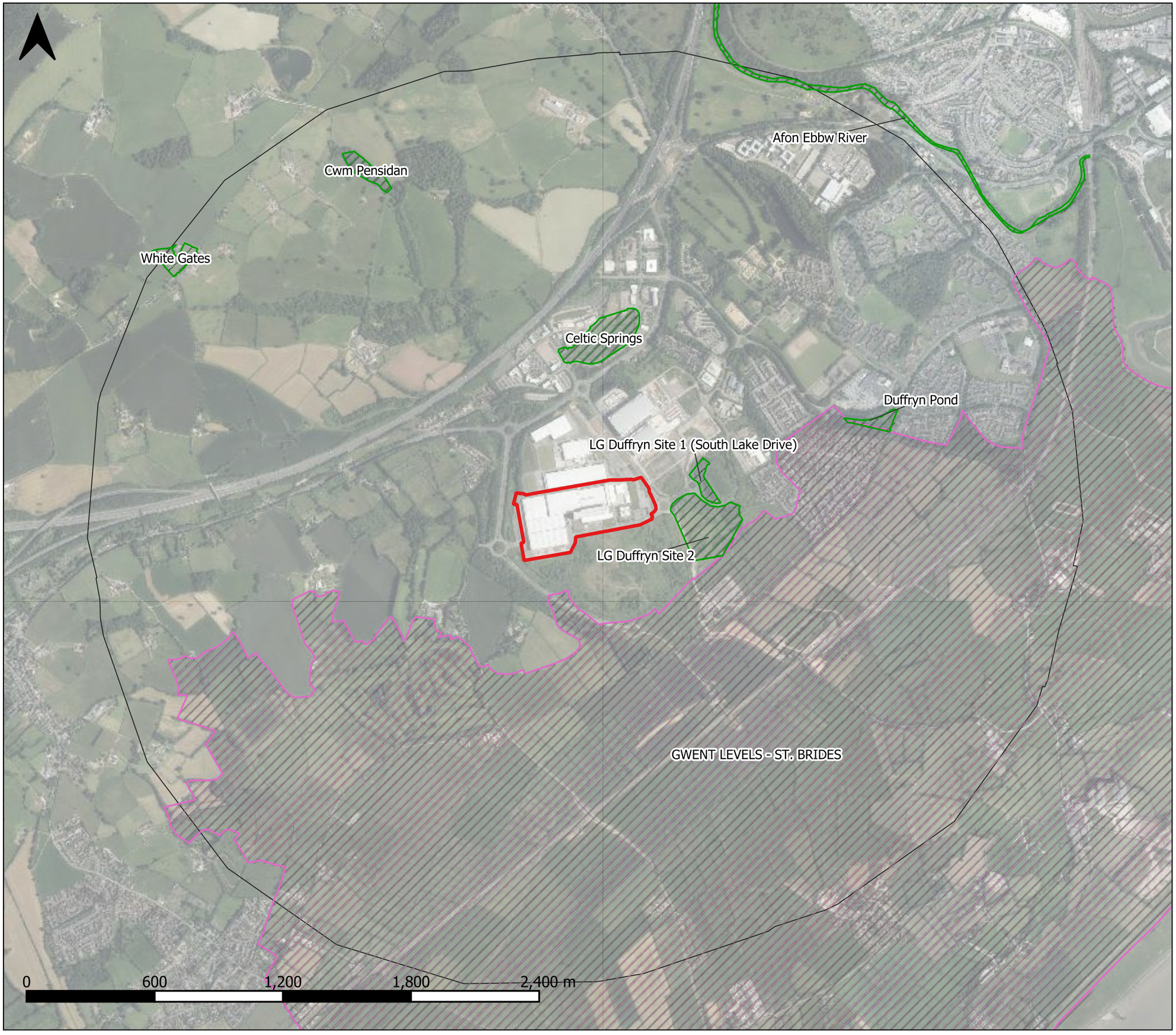
7 Figures

(overleaf)



Legend

- Survey Area
- 2 km buffer
- Site of Interest for Nature Conservation (SINC)
- Site of Special Scientific Interest (SSSI)

BSG ecology

OFFICE: Newport
T:01633 509 000

JOB REF: P21-582

PROJECT TITLE

Former Quinn Radiator Site

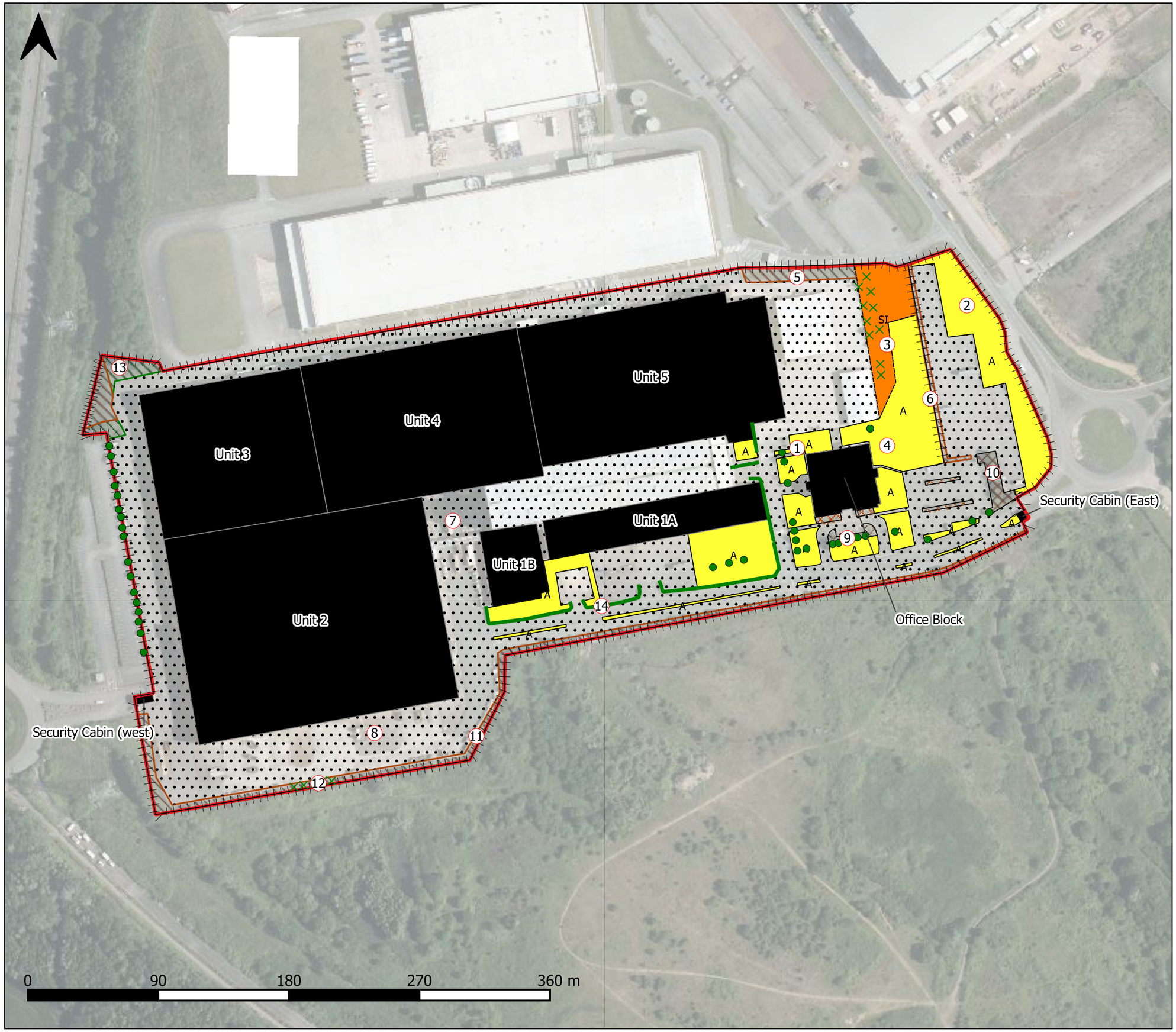
DRAWING TITLE

Figure 1: Designated Sites within 2 km

DATE: 09/07/2021 CHECKED: SCALE: 1:17,000

DRAWN: KR APPROVED: KR VERSION: 1.0

Sources: BSG Ecology survey data



Legend

- Survey Area
- Target note
- Scattered scrub
- Broadleaved tree
- Fence
- Intact hedge - species-poor
- Scrub - dense/continuous
- SI Neutral grassland - semi-improved
- Tall ruderal
- A Amenity grassland
- Introduced shrub
- Buildings
- Bare ground

BSG ecology

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T:01633 509 000

JOB REF: P21-582

PROJECT TITLE

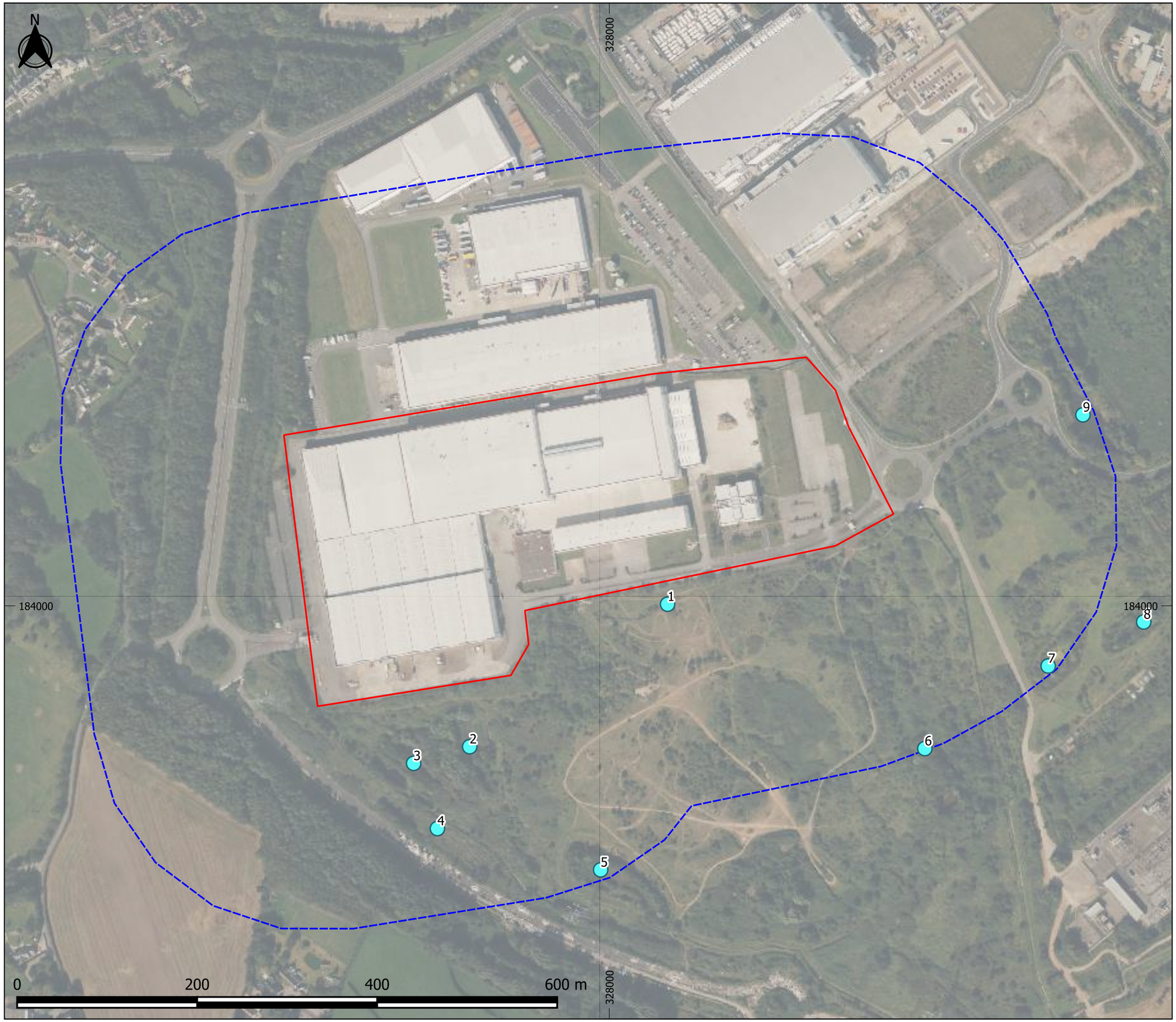
Former Quinn Radiator Site

DRAWING TITLE

Figure 2: Phase 1 Habitat Survey Results

DATE: 09/07/2021 CHECKED: SCALE: 1:2,500

DRAWN: KR APPROVED: KR VERSION: 1.0



Legend

- Pond
- Site boundary
- 250m from Site boundary

BSG | ecology

OFFICE: NEWPORT
T: 01633 509000

JOB REF: P22-136

PROJECT TITLE

FORMER QUINN RADIATOR SITE

DRAWING TITLE

Figure 3: Off-Site Pond Locations

DATE: 28/02/2023 CHECKED: OG SCALE: 1:4,000

DRAWN: KR APPROVED: OG VERSION:1.0

Projection: OSGB 1936/British National Grid - EPSG 27700

Sources: BSG Ecology survey data

Graphics Ref. No.: 02895

8 Appendices

(overleaf)

Appendix 1: GCN HSI Results

HSI criteria	Pond 1		Pond 2	
	Field obs.	HSI value	Field obs.	HSI value
Area (m²)	*32*	0.05	*380*	0.75
Desiccation rate	frequently	0.10	never	0.90
Water quality	poor	0.33	poor	0.33
Shade (% of margin shaded 1m from bank)	10	1.00	70	0.80
Waterfowl	absent	1.00	minor	0.67
Fish population	absent	1.00	minor	0.33
Number of ponds within 1 km	22	1.00	22	1.00
Terrestrial habitat	moderate	0.67	moderate	0.67
Macrophyte cover (%)	10	0.41	90	0.90
HSI score	**0.43**		**0.64**	
Pond suitability[16]	**poor**		**average**	
Notes	Small wheel wash with shallow water and emergent vegetation. Access to 100% of waters edge.		Culvert carrying flowing water into pond from Site. Heavily vegetated and steep banks – no access to water's edge.	

HSI criteria	Pond 3		Pond 4	
	Field obs.	HSI value	Field obs.	HSI value
Area (m²)	*470*	0.90	*800*	1.00
Desiccation rate	never	0.90	never	0.90
Water quality	poor	0.33	poor	0.33
Shade (% of margin shaded 1m from bank)	80	0.60	100	0.20
Waterfowl	minor	0.67	minor	0.67
Fish population	minor	0.33	minor	0.33
Number of ponds within 1 km	22	1.00	22	1.00
Terrestrial habitat	moderate	0.67	moderate	0.67
Macrophyte cover (%)	80	1.00	90	0.90
HSI score	**0.64**		**0.58**	
Pond suitability	**average**		**below average**	
Notes	40 % of the waters edge accessible due to dense vegetation. Water is shallow and pond bed has a dense layer of dead leaves.		Water running into pond from culvert to the north. Banks are steep, densely vegetated with significant rubbish / fly-tipping present.	

[16] ARG UK Advice Note 5 (2010) Great Crested Newt Habitat Suitability Index: https://www.arguk.org/downloads-in-pages/resources/advice-notes/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5/file

HSI criteria	Pond 5			Pond 7		
	Field obs.	HSI value		Field obs.	HSI value	
Area (m²)	*785*	1.00		*1483.65*	0.90	
Desiccation rate	frequently	0.10		never	0.90	
Water quality	poor	0.33		poor	0.33	
Shade (% of margin shaded 1m from bank)	70	0.80		40	1.00	
Waterfowl	absent	1.00		minor	0.67	
Fish population	absent	1.00		major	0.01	
Number of ponds within 1 km	22	1.00		22	1.00	
Terrestrial habitat	moderate	0.67		moderate	0.67	
Macrophyte cover (%)	100	0.80		50	0.81	
HSI score	**0.61**			**0.47**		
Pond suitability	**average**			**poor**		
Notes	5 % of bank accessible. Dense emergent vegetation with limited open water for torching. Possible New Zealand pigmy weed.			60 % of bank accessible. Two moorhen nests present.		

HSI criteria	Pond 8			Pond 9		
	Field obs.	HSI value		Field obs.	HSI value	
Area (m²)	*942*	0.97		*2119.5*	0.80	
Desiccation rate	never	0.90		never	0.90	
Water quality	poor	0.33		poor	0.33	
Shade (% of margin shaded 1m from bank)	40	1.00		40	1.00	
Waterfowl	minor	0.67		major	0.01	
Fish population	major	0.01		minor	0.33	
Number of ponds within 1 km	22	1.00		22	1.00	
Terrestrial habitat	moderate	0.67		moderate	0.67	
Macrophyte cover (%)	40	0.71		40	0.71	
HSI score	**0.46**			**0.42**		
Pond suitability	**poor**			**poor**		
Notes	70 % of bank accessible. Large pike *Esox lucius* recorded and one moorhen *Gallinula chloropus* nest.			40 % of bank accessible. Swan *Cygnus olor* noted on far side of the pond.		

Appendix 2: Results of GCN presence / likely absence surveys

Pond and date of survey	Bottle Trap				Torchlight				Egg Search	Vegetation (/5)	Turbidity (/5)	Comments
	Tc	Lv	Lh	Lv/Lh	Tc	Lv	Lh	Lv/Lh	Tc			
Pond 1												
05-06/05/2022	-	-	-	-	0	0	0	0	0	1	1	
10-11/05/2022	-	-	-	-	0	0	0	0	0	1	1	
12-13/05/2022	-	-	-	-	0	0	0	0	0	1	1	
24-25/05/2022	-	-	-	-	0	0	0	0	0	1	1	
Pond 3												
05-06/05/2022	0	0	0	0	0	0	0	0	0	3	1	Small fish noted during torching
10-11/05/2022	0	0	0	0	0	0	0	0	0	3	1	
12-13/05/2022	0	0	0	0	0	0	0	0	0	3	1	
24-25/05/2022	0	0	0	0	0	0	0	0	0	3	1	
Pond 7												
05-06/05/2022	0	0	0	0	0	0	0	0	0	1	2	1x small newt egg found during egg search.
10-11/05/2022	0	0	0	0	0	3x ♀	0	1x ♀	0	1	2	Large pike noted during torching.
12-13/05/2022	0	0	0	0	0	0	0	0	0	1	2	
24-25/05/2022	0	0	0	0	0	0	0	0	0	1	2	
Pond 8												
05-06/05/2022	0	0	0	0	0	1x ♀	0	0	0	2	3	Small fish noted during torching
10-11/05/2022	0	0	0	0	0	0	0	1x ♀	0	2	3	
12-13/05/2022	0	0	0	0	0	0	0	0	0	2	3	
24-25/05/2022	0	0	0	0	-	-	-	-	0	2	3	
Pond 9												
05-06/05/2022	-	-	-	-	0	0	0	0	0	3	1	Small fish noted during torching
10-11/05/2022	-	-	-	-	0	0	0	0	0	3	1	
12-13/05/2022	-	-	-	-	0	0	0	0	0	3	1	
24-25/05/2022	-	-	-	-	0	0	0	0	0	3	1	

Appendix 3: Preliminary Roost Assessment of Buildings Results

Building ID	Building type	Survey type	Building description			Photo Ref.	Potential roost features / access points	Evidence of roosting bats	Overall assessment
			Stories	Walls	Roof				
Unit 1A	Vacant warehouse	External and internal	1	Insulated / composite sheet cladding	Pitched, composite metal roof with ventilation fans. Boxed eaves / soffits, barge boarding / weather boarding.	1 & 2	Open bay / roll top doors and gaps around vents – drafty and not suitable for bats.	No	Negligible potential
Unit 1B	Vacant warehouse	External only	1	Insulated / composite sheet cladding	Flat roof, metal clad. Boxed eaves / soffits, barge boarding / weather boarding.	3	None.	No	Negligible potential
Unit 2	Vacant warehouse	External and internal	1	Insulated / composite sheet cladding. Large windows (open internally / connected to Unit 3 & 4).	Multi-pitched, composite metal roof. Skylights present, boxed eaves / soffits, barge boarding / weather boarding.	4 & 5	Open bay / roll top doors and gaps around vents – drafty, well-lit and not suitable for bats.	No	Negligible potential
Unit 3	Vacant warehouse	External and internal	1	Insulated / composite sheet cladding. Large windows (open internally / connected to Unit 2 & 4).	Pitched, composite metal roof. Skylights present (in western half), boxed eaves / soffits, barge boarding / weather boarding.	6 & 7	Open bay / roll top doors, damaged to cladding / metal sheeting and gaps around vents – drafty, well-lit and not suitable for bats.	No	Negligible potential
Unit 4	Vacant warehouse	External and internal	1	Insulated / composite sheet cladding (open internally / connected to Unit 2 & 3).	Pitched, composite metal roof. Boxed eaves / soffits, barge boarding / weather boarding.	8 & 9	Gaps around vents – drafty and not suitable for bats.	No	Negligible potential
Unit 5	Vacant warehouse	External and internal	1	Insulated / composite sheet cladding	Pitched, composite metal roof. Boxed eaves / soffits, barge boarding / weather boarding. Covered bays on eastern aspect.	**10 & 11**	Open air vents, large gaps in cladding (> 30cm) – drafty and not suitable for bats.	No	Negligible potential

Office building	Vacant office block	External and internal	2	Insulated cladding. Metal framed plate glass windows surrounding each floor.	Flat roof with a domed central band. Composite insulated metal roof. Boxed eaves / soffits, barge boarding / weather boarding. No roof voids.	**12**	None – roofing material / eaves close fitting.		Negligible potential
Security Cabin (east)	Security cabin (in use)	External only	1	Insulated / composite sheet cladding. Metal framed windows.	Flat roof, metal clad. No roof voids.	**13**	None – roofing material / eaves close fitting.		Negligible potential
Security Cabin (west)	Vacant security cabin	External only	1	Insulated / composite sheet cladding. Metal framed windows.	Flat roof, metal clad. No roof voids.	**14**	None – roofing material / eaves close fitting.		Negligible potential

Appendix 4: Preliminary Roost Assessment of Buildings Photos

(overleaf)

Photo 1: Unit 1A external.

Photo 2: Unit 1A internal.

Photo 3: Unit 1B external.

Photo 4: Unit 2 external.

Photo 5: Unit 2 internal.

Photo 6: Unit 3 external.

Photo 7: Unit 3 internal.

Photo 8: Unit 4 external.

Photo 9: Unit 4 internal.

Photo 10: Unit 5 external

Photo 11: Unit 5 internal

Photo 12: Office block**.**

Photo 13: Security cabin (east).

Photo 14: Security cabin (west).

Appendix 5: Target Notes

Ref.	Feature	Photograph
TN 1	**Amenity grassland** Largely managed for amenity purposes, the sward is short, uniform with few herb species present.	
TN 2	**Amenity grassland** Mown, but less uniform than elsewhere on Site with bare patches occurring	
TN 3	**Semi-improved neutral grassland & scattered scrub** Less intensively management and fairly herb rich.	
TN 4	**Semi-improved neutral grassland** Area of longer / unmown grassland, with a longer sward length but fewer herb species present.	

TN 5	**Tall ruderal vegetation and ephemeral / short perennial** Situated on a south facing bank along northern Site boundary.	
TN 6	**Tall ruderal vegetation and ephemeral / short perennial** Situated on an east facing bank adjacent to a car park.	
TN 7	**Buildings, hardstanding / bare ground and ephemeral / short perennial** Vegetation colonising cracks within hardstanding.	
TN 8	**Buildings, hardstanding / bare ground and ephemeral / short perennial** Vegetation colonising gravelled areas the hardstanding.	

TN 9	**Ornamental planting & scattered trees**	
TN 10	**Ornamental planting & scattered trees**	
TN 11	**Tall ruderal vegetation and ephemeral / short perennial** Situated on along the southern Site boundary.	
TN 12	**Scattered scrub** Small patch of immature white poplar *Populus alba*	

TN 13	**Dense scrub** Small area of dense scrub is located at the north-eastern Site boundary.	
TN 14	**Intact species-poor hedgerow** Several lengths of well managed laurel *Laurus nobilis* hedgerow.	

Appendix 6: Summaries of Relevant Policy, Legislation and Other Instruments

8.1 This section briefly summarises the legislation, policy and related issues that are relevant to the main text of the report. The following text does not constitute legal or planning advice.

Planning Policy Wales 11

8.2 PPW 11 seeks to sustain and create places in which…

- the role which landscapes, the historic environment, habitats and biodiversity, the characteristics of coastal, rural or urban environments play in contributing to Distinctive and Natural places are identified, understood, valued, protected and enhanced;
- further fragmentation of habitats is avoided, wherever possible, and green networks, corridors and connecting habitat within developed areas is protected, and enhanced;
- sites designated for their landscape or nature conservation importance are fully considered and their special characteristics and features protected and enhanced, whilst the network of sites should be recognised as being at the heart of improving the resilience of ecosystems;

8.3 Paragraph 6.4.4 states that

"*It is important that biodiversity and resilience considerations are taken into account at an early stage in both development plan preparation and when proposing or considering development proposals. [……] All reasonable steps must be taken to maintain and enhance biodiversity and promote the resilience of ecosystems and these should be balanced with the wider economic and social needs of business and local communities. Where adverse effects on the environment cannot be avoided or mitigated, it will be necessary to refuse planning permission*."

8.4 Paragraph 6.4.5 states that

"*Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity. In doing so planning authorities must also take account of and promote the resilience of ecosystems……"*

TAN 5 Nature Conservation and Planning (Wales only)

8.5 Technical Advice Note (TAN) 5 supplements Planning Policy Wales and provides advice about how the land use planning system in Wales 'should contribute to protecting and enhancing biodiversity and geological conservation.'

8.6 The TAN provides guidance to local planning authorities on: 'the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and, development affecting protected and priority habitats and species.'

8.7 In section 2.4 when deciding planning applications that may affect nature conservation, 'local authorities should:

- contribute to the protection and improvement of the environment…seeking to avoid irreversible harmful effects on the natural environment;
- ensure that appropriate weight is attached to designated sites of international, national and local importance;
- protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of a development on nature conservation;

- ensure that the range and population of protected species is sustained;
- adopt a stepwise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered.'

8.8 At section 3.3.2 regarding Local Development Plans policies the guidance states that a policy should be included in respect of the application of the precautionary principle.

8.9 Section 4 includes specific and detailed guidance, expanding on the principles set out in 2.4, in respect of the development control process including pre-application discussions, preparing planning applications, requests for further information and ecology in respect of Environmental Impact Assessment (EIA). The broad principles of development control requirements are set out as follows:

- 'adopting the five-point approach to decision-making – information, avoidance, mitigation, compensation and new benefits;
- ensuring that planning applications are submitted with adequate information, using early negotiation, checklists, requiring ecological surveys and appropriate consultation;
- securing necessary measures to protect, enhance, mitigate and compensate through planning conditions and obligation;
- carrying out effective panning enforcement; and
- identifying ways to build nature conservation into the design of new development.'

Environment (Wales) Act 2016

8.10 The Environment (Wales) Act 2016 passed into law in March 2016. Part 1 of the Act sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

8.11 Section 6 of the Act places a duty on public authorities to '*seek to maintain and enhance biodiversity*' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to '*promote the resilience of ecosystems*'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 in relation to Wales, and applies to those authorities that fell within the previous duty.

8.12 Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience. This is expanded on in sub-section (2):

8.13 In complying with subsection (1), a public authority must take account of the resilience of ecosystems, in particular the following aspects—

- diversity between and within ecosystems;
- the connections between and within ecosystems;
- the scale of ecosystems;
- the condition of ecosystems (including their structure and functioning);
- the adaptability of ecosystems.

8.14 Section 7 concerns biodiversity lists and the duty to take steps to maintain and enhance biodiversity. It replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

8.15 The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

European protected species (Animals)

8.16 The Conservation of Habitats and Species Regulations 2017 (as amended) consolidates various amendments that have been made to the original (1994) Regulations which transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.

8.17 "European protected species" (EPS) of animal are those which are shown on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). They are subject to the provisions of Regulation 43 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

a. Intentionally or deliberately capture, injure or kill any wild animal included amongst these species
b. Possess or control any live or dead specimens or any part of, or anything derived from a these species
c. deliberately disturb wild animals of any such species
d. deliberately take or destroy the eggs of such an animal, or
e. intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place

8.18 For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely—

a. to impair their ability—
    i. to survive, to breed or reproduce, or to rear or nurture their young, or
    ii. in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
b. to affect significantly the local distribution or abundance of the species to which they belong.

8.19 Although the law provides strict protection to these species, it also allows this protection to be set aside (derogated) through the issuing of licences. The licences in England are currently determined by Natural England (NE) for development works and by Natural Resources Wales in Wales. In accordance with the requirements of the Regulations (2017, as amended), a licence can only be issued where the following requirements are satisfied:

a. The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'
b. 'There is no satisfactory alternative'
c. The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Definition of breeding sites and resting places

8.20 Guidance for all European Protected Species of animal, including bats and great crested newt, regarding the definition of breeding and of breeding and resting places is provided by The European Council (EC) which has prepared specific guidance in respect of the interpretation of various Articles of the EC Habitats Directive.[17] Section II.3.4.b) provides definitions and examples of both breeding

[17] Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. (February 2007), EC.

and resting places at paragraphs 57 and 59 respectively. This guidance states that 'The provision in Article 12(1)(d) [of the EC Habitats Directive] should therefore be understood as aiming to safeguard the ecological functionality of breeding sites and resting places.' Further the guidance states: 'It thus follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are not being used, but where there is a reasonably high probability that the species concerned will return to these sites and places. If for example a certain cave is used every year by a number of bats for hibernation (because the species has the habit of returning to the same winter roost every year), the functionality of this cave as a hibernating site should be protected in summer as well so that the bats can re-use it in winter. On the other hand, if a certain cave is used only occasionally for breeding or resting purposes, it is very likely that the site does not qualify as a breeding site or resting place.'

Competent authorities

8.21 Under Regulation 7 of the Conservation of Habitats and Species Regulations 2017 (as amended) a "competent authority" includes "any Minister of the Crown…, government department, statutory undertaker, public body of any description or person holding a public office.

8.22 In accordance with Regulation 9, "a competent authority must exercise their functions which are relevant to nature conservation, including marine conservation, so as to secure compliance with the requirements of the [Habitats and Birds] Directives. This means for instance that when considering development proposals a competent authority should consider whether EPS or European Protected Sites are to be affected by those works and, if so, must show that they have given consideration as to whether derogation requirements can be met.

Birds

8.23 All nesting birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to disturb them whilst they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

8.24 The Conservation of Habitats and Species Regulations 2017 (as amended) places duties on competent authorities (including Local Authorities and National Park Authorities) in relation to wild bird habitat. These provisions relate back to Articles 1, 2 and 3 of the EC Directive on the conservation of wild birds (2009/147/EC, 'Birds Directive'[18]) (Regulation 10 (3)) requires that the objective is the 'preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat, as appropriate, having regard to the requirements of Article 2 of the new Wild Birds Directive…' Regulation 10 (7) states: 'In considering which measures may be appropriate for the purpose of security or contributing to the objective in [Regulation 10 (3)] Paragraph 3, appropriate account must be taken of economic and recreational requirements'.

8.25 In relation to the duties placed on competent authorities under the 2017 Regulations, Regulation 10 (8) states: 'So far as lies within their powers, a competent authority in exercising any function [including in relation to town and country planning] in or in relation to the United Kingdom must use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds (except habitats beyond the outer limits of the area to which the new Wild Birds Directive applies).'

Reptiles

8.26 All native reptile species receive legal protection in Great Britain under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Viviparous lizard, slow-worm, grass snake and adder are protected against killing, injuring and unlicensed trade only. Sand lizard and smooth snake receive additional protection as "European Protected species" under the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended) and are fully protected under the Wildlife and Countryside Act 1981 (as amended).

[18] 2009/147/EC Birds Directive (30 November 2009. European Parliament and the Council of the European Union.

8.27 All six native species of reptile are included as 'species of principal importance' for the purpose of conserving biodiversity under Section 41 (England) of the NERC Act 2006 and Section 7 of the Environment (Wales) Act 2016.

8.28 Current Natural England Guidelines for Developers[19] states that 'where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.' Further the guidance states: 'Normally prohibited activities may not be illegal if 'the act was the incidental result of a lawful operation and could not reasonably have been avoided'. Natural England 'would expect reasonable avoidance to include measures such as altering development layouts to avoid key areas, as well as capture and exclusion of reptiles.'

8.29 The Natural England Guidelines for Developers state that 'planning must incorporate two aims where reptiles are present:

- To protect reptiles from any harm that might arise during development work;
- To ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate the reptile population, either on-site or at an alternative site, with no net loss of local reptile conservation status.'

Wild mammals in general

8.30 The Wild Mammals (Protection) Act 1996 (as amended) makes provision for the protection of wild mammals from certain cruel acts, making it an offence for any person to intentionally cause suffering to any wild mammal. In the context of development sites, for example, this may apply to rabbits in their burrows.

[19] English Nature, 2004. *Reptiles: guidelines for developers.* English Nature, Peterborough. https://webarchive.nationalarchives.gov.uk/20150303064706/http://publications.naturalengland.org.uk/publication/76006

APPENDIX C FIGURES

Figure 1: Extended Phase 1 Habitat Map (May 2023) and Static Bat Detector Location

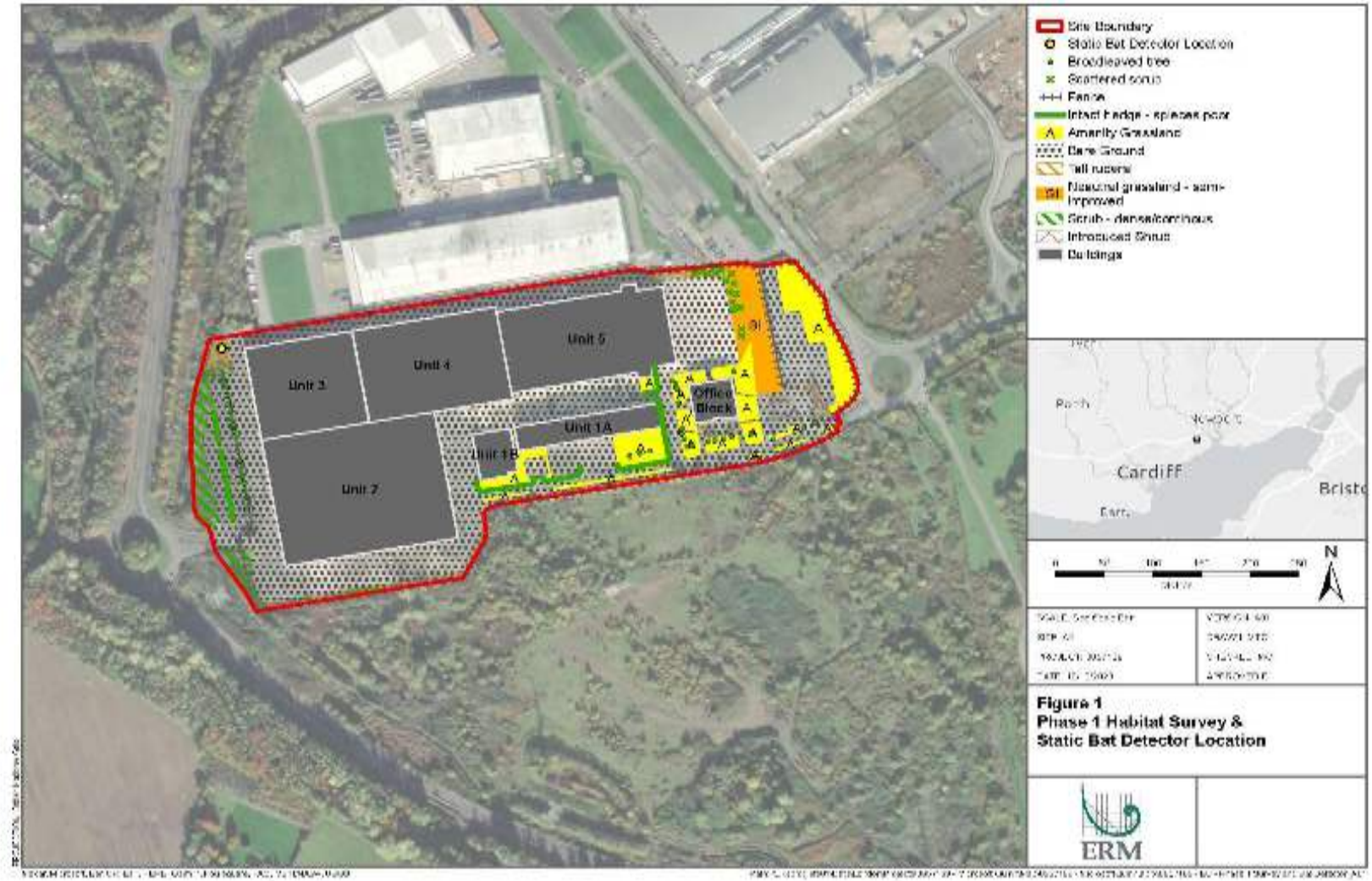


Figure 2: Landscape Tree Removal Plan

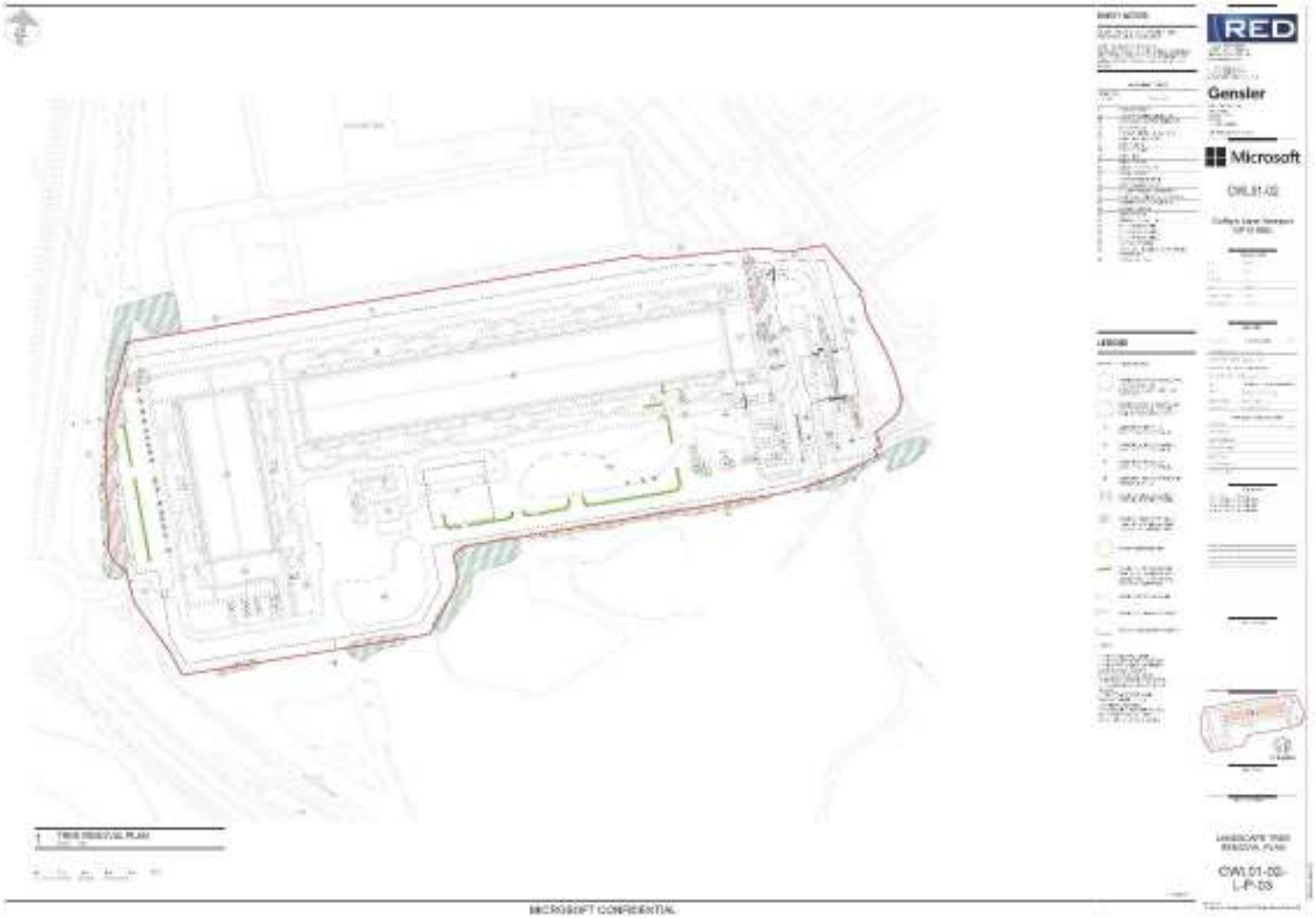
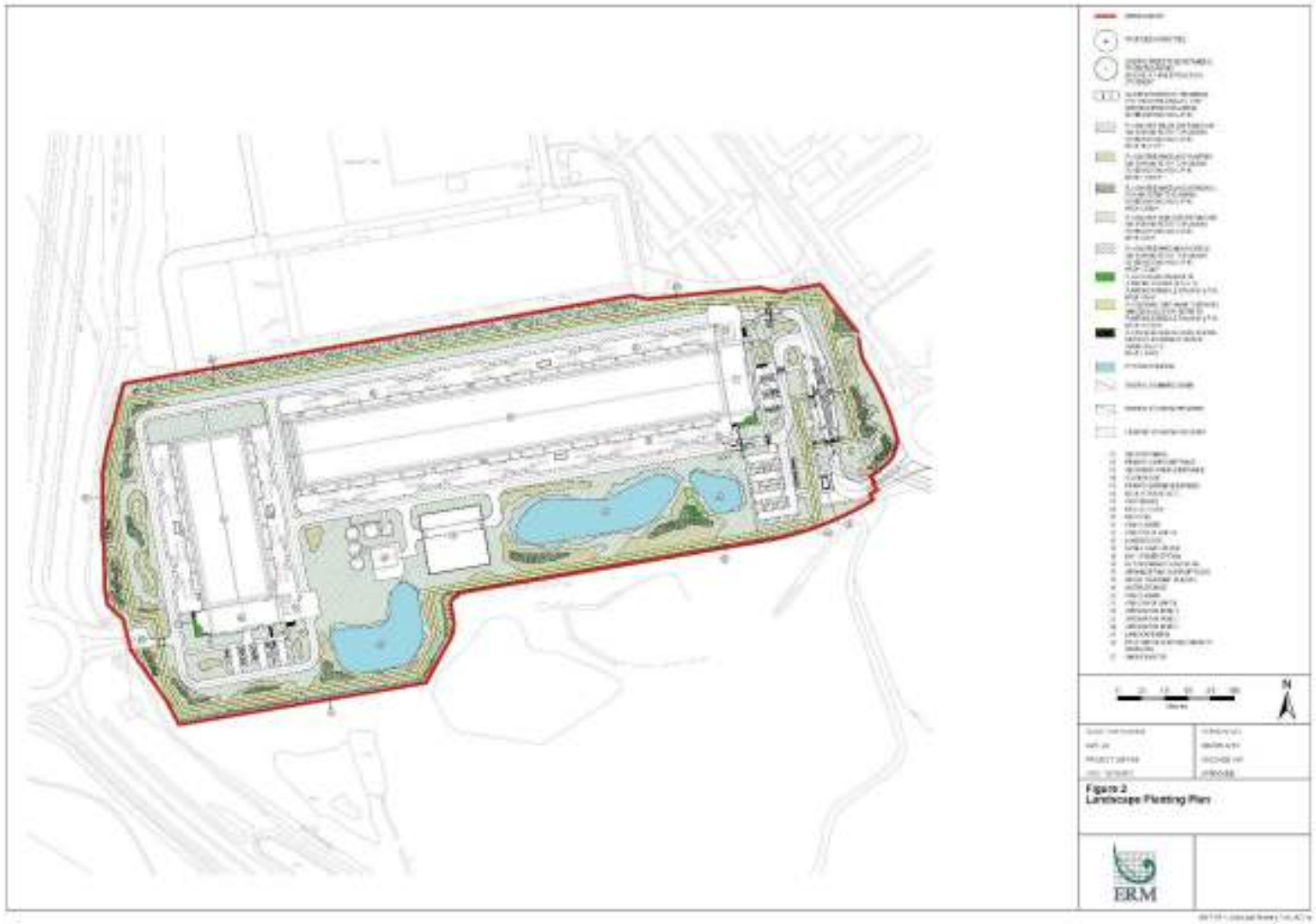


Figure 3: Landscape Planting Plan



APPENDIX D EXTENDED PHASE 1 HABITAT SURVEY REPORT (MAY 2023)

Red Engineering Design Ltd – Microsoft Ltd

Extended Phase 1 Habitat Survey Report

CWL01 & 02 – Microsoft Ltd

Ocotber 2023

Project No.: 0657169

The business of sustainability

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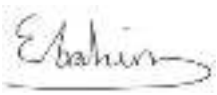
Former Quinn Radiator Factory

Extended Phase 1 Habitat Report



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CONTENTS

1. Introduction

1.1 Background and Purpose of this Report

Environmental Resources Management Ltd (ERM) was appointed to complete an extended Phase 1 Habitat survey at the former Quinn Radiator site in Newport, Wales (**Figure 1**). An extended Phase 1 Habitat survey was previously undertaken at the site by BSG Ecology in June 2021[1].

ERM's survey was undertaken to update the findings of the June 2021 survey and identify the presence, or likely presence, of ecological constraints for proposed works on the site, including the presence of legally protected and/or otherwise notable habitats and species.

The desk-based study undertaken in 2021 is still valid and has not been repeated. Following the recommendations in the initial Extended Phase 1 Habitat survey, great crested newt (GCN) surveys were undertaken in 2021 on five ponds within 250 m of the site and no GCNs were found to be present in any of the ponds. The site was also categorised as being of low value for foraging and commuting bats and surveys following the methodology set out in Colins, 2016[2]. As surveys for both of these species are still valid, they have not been re-assessed as part of this report.

Surveys are required to inform the planning application for a Proposed Development which comprises the demolition of existing structures on site, and the construction of two data centre buildings with associated buildings and landscaping which includes attenuation ponds, grasslands, and woodland planting (**Figure 1, Appendix A)**.

1.2 Site Description and Study Area

The site lies to the east of Newport, south of the M4 (ST 27923 84118) and is approximately 16 ha. The former radiator site has been vacant since June 2019 and predominantly comprises warehouses, office buildings and areas of hardstanding (former parking spaces, roads and pedestrian areas). In the eastern areas of the site there are areas of amenity grassland, ornamental planting and scattered trees, which were previously heavily managed but less so since the abandonment of the site. Due to the reduced management around the site, there are areas of tall ruderal and ephemeral vegetation within the areas of hardstanding and bare ground. Other habitats within the site include scrub and semi-improved grassland.

2. METHODOLOGY

Field surveys were undertaken on 25 May 2023 by ERM senior consultant Errol Ibrahim, assisted by Max Canning, an ERM consultant. Errol has over 9 years' experience in ecological consultancy and is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). He is experienced in undertaking extended Phase 1 Habitat surveys and holds a Class 2 Natural England licence for bats (2017-32783-CLS-CLS) and a Class 1 Great Crested Newt (*Triturus cristatus*) licence (2015-16242-CLS-CLS).

2.1 Extended Phase 1 Habitat Survey

The May 2023 field surveys were based on the methods described in the Handbook for Phase 1 Habitat Survey (Joint Nature Conservation Committee 2010)[3] as extended for use in Environmental Assessment[4].

The surveys involved the mapping of habitats using a set of standardised habitat codes (**Figure 2**) and target notes were made to illustrate examples of habitats present (Appendix B). Any invasive,

[1] BSG Ecology (2021), Former Quinn Radiator Factory, Ecological Assessment.

[2] Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

[3] JNCC (2010), Handbook for Phase 1 Habitat Survey (revised edition). JNCC, Peterborough.

[4] Institute of Environmental Assessment (1995) Guidelines for Baseline Ecological Assessment, Spon, London.

non-native species (INNS) identified were noted, however, an exhaustive search for INNS was not undertaken. Plant nomenclature in this report follows Stace (2019)[5].

2.2 Protected Species

The site was assessed for its suitability for protected and notable animals that are likely to occur in the area, excluding bats and great crested newts as explained in **Section 1.1**. These included, but were not limited to, badgers (*Meles meles),* breeding birds, common reptiles and hazel dormice (*Muscardinus avellanarius*). The site was systematically searched for signs of these species.

2.2.1 Badgers

The site was searched for signs of badgers which include setts, paths, hair, feeding signs, latrines and dung pits.

2.2.2 Common Reptiles

The site was assessed for its suitability for common reptiles i.e., common lizards (*Zootoca vivipara*), grass snakes (*Natrix natrix*), slow-worms (*Anguis fragilis*) and adder (*Vipera berus*). Suitable habitat for reptiles includes areas which provide basking such as south-facing slopes, hibernation sites such as log piles and foraging habitat. Foraging habitat differs between species but includes rough grasslands, woodlands, ponds and wetlands.

2.2.3 Hazel Dormouse

The habitats on site were assessed for their suitability for dormice. This involved consideration of habitat structure and presence of plant species favoured by dormice for nest building, such as *Corylus avellana* (Hazel) and *Lonicera sp* (Honeysuckle). Dormice typically use areas of dense woody vegetation cover and are more likely to be found where there is a wide diversity of species, a number of food sources and good connectivity to other areas of suitable habitat.

2.2.4 Nesting Birds

The site was assessed for its potential to be used by nesting birds, considering habitat types and the location of the site. Birds can use a variety of habitats for nesting such as trees, hedgerows, buildings and grasslands.

2.3 Limitations

Surveys were undertaken during the optimal time for an Extended Phase 1 Habitat surveys with full access to all areas, there were no limitations identified during the survey.

[5] Stace, C.A. (2019), New Flora of the British Isles (4th edition). C&M Floristics, Stowmarket.

3. RESULTS

3.1 Habitats

This section provides the results of habitat survey, results can also be seen in **Figure 2**.

3.1.1 Bare ground and hardstanding with Ephemeral/Short Perennial and Tall Ruderals

Buildings from the former Quinn Radiator Site are still present, there are seven buildings in total which are approximately 20 years old and make up the majority of the site.

Bare ground and hardstanding are found throughout the site:tarmac roads, car parks and pedestrian walkways for the former Quinn Radiator Site (**Target note 1, Appendix B**).

Due to the reduced management of the site, ephermeral/short perennial vegetation and tall ruderal species are scattered in areas of bare ground and hardstanding. Species include *Anagallis arvensis* (scarlet pimpernel), *Buddleja davidii* (butterfly-bush), *Centranthus ruber* (red valerian), *Helminthotheca echioides* (bristly oxtongue) and *Senecio jacobaea* (common ragwort).

3.1.2 Amenity Grassland

There are areas of amenity grassland throughout the east of the site and located around the office buildings to the south. These areas of amenity grassland are less managed than noted during the 2021 survey, but the sward height remains short. Dominant species present remains *Holcus lanatus* (Yorkshire fog), *Lolium perenne* (perennial rye-grass) and *Trifolium repens* (white clover).

There are areas of amenity grassland where reduced management has resulted in bare patches and presence of scrub and tall ruderal species (**Target note 2, Appendix B**) and **Image 1**) such as *Buddleja davidii* (butterfly-bush), *Cirsium vulgare* (spear thistle) and *Rubus fruticosus agg.* (bramble). If these areas continue under a reduced management schedule it is likely that either tall ruderals or scrub will become the dominant habitat type.

Image 1. Area of amenity grassland where scrub and tall ruderal species are present

3.1.3 Semi-improved Grassland

There is semi-improved grassland found to the east of the site, primarily on a west-facing bank (**Target Note 3** and **Image 2, Appendix B**). Although the sward is short, this area appears unmanaged and species present are similar to which was noted in the 2021 survey, which comprises grasses such as *Arrhenatherum elatius* (false oat-grass), *Holcus lanatus* (Yorkshire fog) and *Poa*

trvialis (rough meadow grass), and herb species including *Leucanthemum vulgare* (oxeye daisy), *Lotus pedunculatus* (greater bird's foot trefoil) and *Ranunculus acris* (meadow buttercup).

Image 2. Area of semi-improved grassland with scattered scrub

3.1.4 Scrub

Scrub is present in the south (**Image 3**) and north-west corners of the site and to the west (with the area of semi-improved grassland on the west-facing bank). The areas of scattered scrub are dominated by *Prunus sp.* (cherry), *Rosa canina* (dog-rose), *Rubus fruticosus agg.* (bramble) and *Salix sp.* (willow). Within the scrub in the south-west corner there is dense scrub where *Alnus glutinosa* (Alder) is also present.

Image 3. Area of scrub within the south west corner of the Site

3.1.5 Scattered Trees

Scattered trees found within the amenity grassland comprise *Acer platanoides* (Norway maple), *Pinus sp.* (pine) and *Prunus sp.* (cherry) all of which are mature.

3.1.6 Intact species-poor hedgerow

Several managed *Laurus nobilis* (laurel) hedgerows bordering areas of amenity grassland are present to the south of the office buildings.

3.1.7 Introduced Shrub

Areas of introduced shrub is present to the east of the site (near the entrance) and along the southern boundary of the site with small pockets present across the site. The species composition of mostly non-native species matches that of the survey undertaken in 2021 and includes *Acer platanoides* (Norway maple), *Acer palmatum* (Japanese maple), *Bambusa sp* (bamboo), *Buddleja davidii* (butterfly-bush, *Carex pendula* (pendulous sedge), *Cornus sanguinea* (dogwood) and *Santolina chamaecyparissus* (lavender-cotton).

3.2 Protected Species

3.2.1 Badgers

Areas within the site are not suitable sett building habitat for badgers and no active setts or evidence of badgers were found during the survey. Badgers are considered absent from the site and no further surveys are recommended.

3.2.2 Common Reptiles

The majority of the site remains unsuitable for reptiles, the hardstanding and buildings offer limited suitability foraging or refuge habitat, although areas of hardstanding could be used for basking if reptiles are present. The areas of semi-improved grassland and scrub, provide some suitable habitat for reptiles. No reptiles were seen during the survey, due to the limited habitat on site it is considered that only individual or low numbers of reptiles are likely to be present.

3.2.3 Birds

Buildings, trees, scrub and grassland within site provide suitable nesting habitat for birds. A number of feral pigeons (*Columba livia domestica*) were seen using the warehouses during the survey.

3.2.4 Hazel Dormouse

Although there are some limited food sources on site, the habitats lack the required diversity, food sources and connectivity to other areas of suitable habitat for hazel dormice. This species is considered absent from the site and no further surveys are recommended.

4. Conclusions and Recommendations

4.1.1 Habitats

Habitats found on site are common and widespread and do not qualify as Habitats of Principal Importance. Habitats lack particular ecological value owing to their collective amenity character. The construction of purpose-built data centre buildings with associated infrastructure and landscaping will result in the loss of the majority of habitats on site.

However, the Proposed Development will seek to enhance biodiversity by creating a more ecologically diverse landscape in line with national policy[6]. This will include the planting of native trees, hedgerows, wildflower meadows, woodlands, and ponds (**Figure 1, Appendix A**). A Landscape Environmental Management Plan should be produced to ensure maintenance of these enhancements.

4.1.2 Protected Species

4.1.2.1 Badgers

No active badger setts or evidence of badgers were identified during the survey.

[6] Section 6 of the Environment (Wales) Act 2016

As badger social clans occupy large territories extending over 30 ha, there remains the possibility that badgers attend the site without residing there, as such any excavation works such as the creation of trenches, if left open overnight will require the placement of a ramp so badgers (and other mammals and amphibians) can escape. Due to the dynamic nature of badgers if the proposed works do not commence within 12 months of the date of the Extended Phase 1 Habitat survey, an updated badger survey is recommended to ensure that understanding of badger use of the site remains up to date.

4.1.2.2 Common Reptiles

Some habitats on site provided limited suitability for individual reptiles (semi-improved grassland and scrub). Clearance work should be undertaken under a precautionary working method statement, under the supervision of the site ecological clerk of works (ECoW). This method statement should include instructions on phased vegetation clearance in order to dissuade reptiles into areas of suitable habitat which will be undisturbed during the proposed works.

4.1.2.3 Birds

The site provides a range of habitats that are likely to be used by breeding birds, namely the buildings, trees, scrub and grassland.

Any vegetation or building removal as part of the works should be completed outside the bird breeding season which runs approximately from March to August (inclusive). If this is not possible, an ECoW should complete a breeding bird check not more than 24 hrs before the scheduled vegetation clearance. If any nesting birds/evidence of nesting birds are found (such as nests or birds carrying nesting material) a buffer of approximately 5 m (depending upon the species present) should be put in place around the nest and it should be left undisturbed until the chicks have fledged.

APPENDIX A FIGURES

Figure 1: Planned Planting Schedule

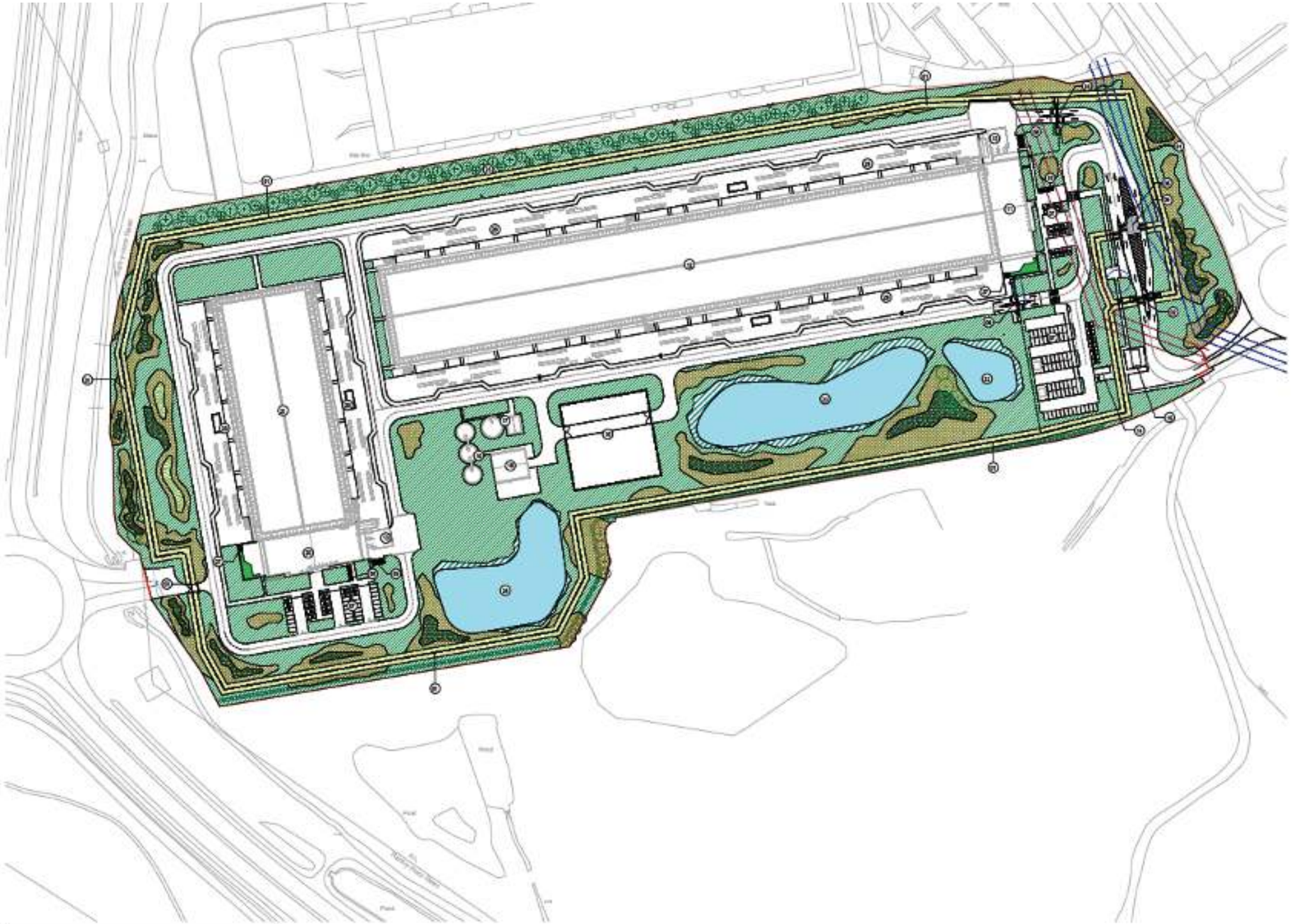
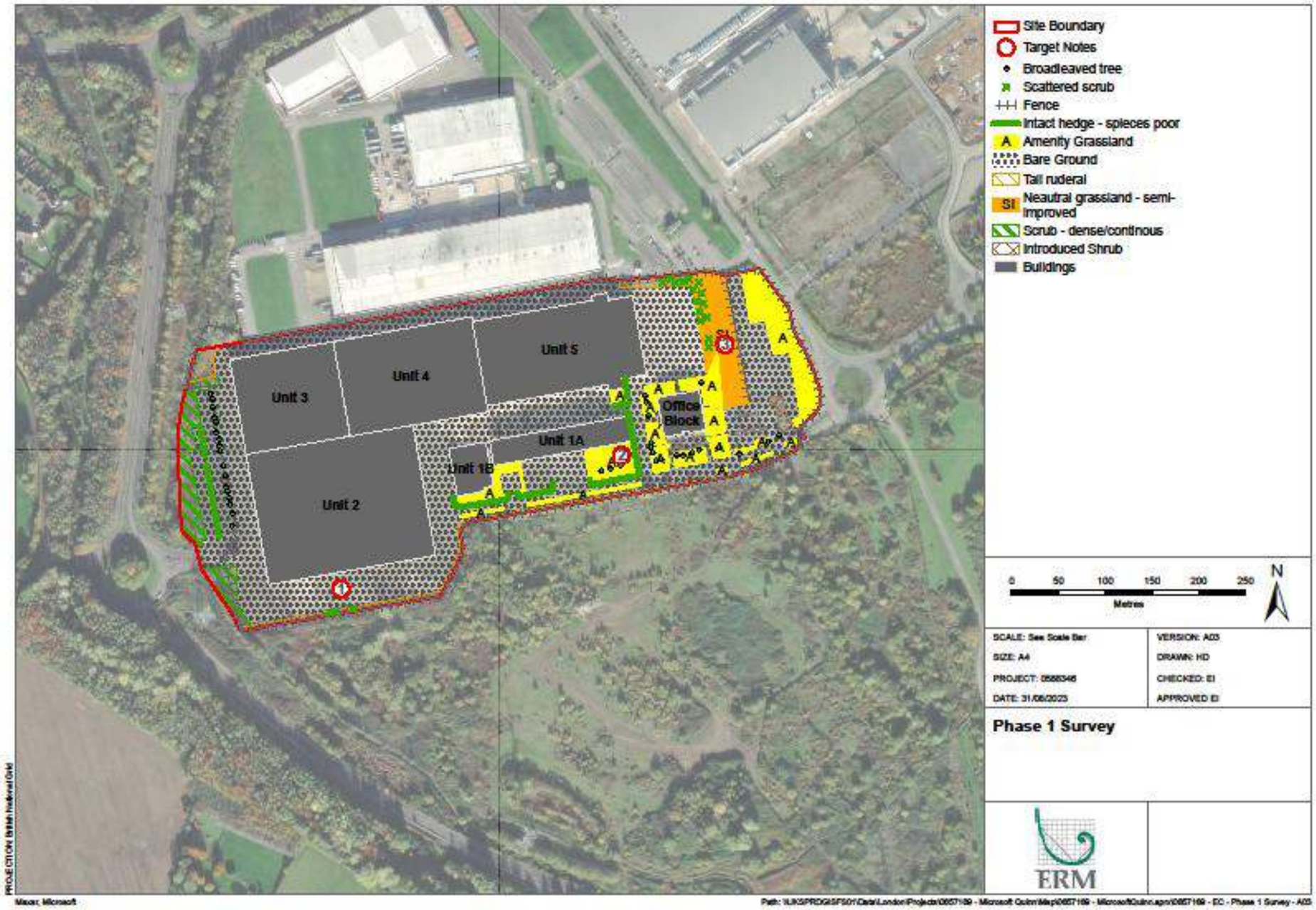


Figure 2: Phase 1 Habitat Survey Results



APPENDIX B TARGET NOTES

Target note	Feature
1	Area of tarmac hardstanding, road used as part of the Former Quinn Radiator factory.
2	Amenity grassland where the reduced management has resulted in bare patches and presence of scrub and tall ruderal species.
3	Semi-improved grassland including grasses such as *Arrhenatherum elatius* (false oat-grass) and *Holcus lanatus* (Yorkshire fog) and herb species including *Leucanthemum vulgare* (oxeye daisy). This area seems to be unmanaged although the sward is still relatively short.

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